A

TREATISE

ON

THE DISEASES OF CHILDREN.

VOLUME THE THIRD:

ON

THE NATURE AND PROPERTIES

OF HUMAN-MILK;

AND

THE MANAGEMENT

OF THE NURSERY.

Price 12s. sewed.

26.c.27

A

TREATISE

ON

THE DISEASES OF CHILDREN,

WITH DIRECTIONS

FOR

THE MANAGEMENT OF INFANTS

FROM

THE BIRTH.

By MICHAEL UNDERWOOD, M.D.

LICENTIATE IN MIDWIFERY

OF THE

Royal College of Physicians, in London,

PHYSICIAN to

Her ROYAL HIGHNESS the PRINCESS of WALES,

AND

SENIOR PHYSICIAN

To the Britiſh Lying-in-Hoſpital.

IN THREE VOLUMES.

VOL. III.

THE FOURTH EDITION, REVISED AND ENLARGED.

Ornari Res ipſa negat, contenta doceri. MANILL.

LONDON;

PRINTED FOR J. MATHEWS, NO. 18, STRAND.

M DCC XCIX.

BOSTON MEDICAL
MAR 29 1904
LIBRARY.

CONTENTS

OF THE

THIRD VOLUME.

Page

PREFACE - - - 1-111

INTRODUCTION, On the Nature and Properties of Human-milk - 6-68

DIRECTIONS for the MANAGEMENT of INFANTS from the BIRTH.

Dry-nurſing, unnatural - 69-70

Arguments in favour of it uſually futile - 71

The

Page

The Duty of great attention to Infants 78-79
Hints taken from the irrational Species 80-81
Great Heat and Cold, and ſtrong Light to be avoided - 82
On waſhing of Infants - 82-88
On the Cold-bath (Note) - 85-88
On the Intertrigo, Chafings or Excoriations - - 90
On forcing out the milk from the breaſts - - - 93
Errors in regard to the firſt-clothing of Infants - - 95-100

OBSERVATIONS on the NON-NATURALS.

On AIR - - - 101
The Snuffles - 107
Change of Clothes 107-108
On MEAT and DRINK - 109-155
Children require no food immediately after Birth 109
Milk, the moſt proper of all food 113-121
Infants will pine for a long time after the Breaſt, when prematurely taken from it - - 117-120

The

Page

The Milk, or Bubby-pot, its excellent contrivance - - 123-124
Reſemblance to the Nipple 128
Objections anſwered 129-133
Change of food as Children grow older - - 135-139
Proper times of feeding - 140
Proper diet when ill - 141-144
On the aceſcent quality of the food of Infants, their diſpoſition to Wind, and their Remedies - 144-147
On the choice of Wet-nurſes, and their Diet - - 148-150
On weaning of Children - 150-155
On SLEEP and WATCHING 155-160
Obſervations on the Cradle 158-160
On MOTION and REST 161-187
Exerciſe how important to Health 161-163
Proper time of putting Children on their feet - 163-167
Caution in regard to Females 172-174
Inquiry into the fatality amongſt the children of the poor, and ſome attempt towards a remedy propoſed 169-171
On REST - - 174-175

On

Page

On ſome ſlighter natural Deformities with the means of Prevention, and Cure - - 175-187

On RETENTION and EXCRETION - - - 188

Retention and Incontinence of Urine - 188-191

Infants bowels ſhould be always open - 191-192

On the PASSIONS of the MIND 193-197

Laughter and Crying 193-195

On the Tempers of Wet-nurſes - 196-197

Alphabetical liſt of medicines under old and new Names - 199-201

ERRATA.

Page 22, Line twenty, for may, r. many.
80, Line twenty, for implicity, r. implicitly.

DIRECTIONS TO THE BINDER.

The Table of different Milks to be placed immediately after the Introduction.

PREFACE.

WHATEVER Splendour the actual Treatment of Diſeaſes may reflect on the Science of Medicine, it, by no means, comprehends the whole of its Province: for Prevention being in every caſe preferable to Remedies, the medical Art would be more imperfect than other Sciences, were it devoted only to the latter. In the management of Infants more eſpecially, ſuch a variety of other articles occurs ſubject to medical direction, that this work would

be peculiarly incomplete if confined merely to the Cure of Diſorders. In a view, therefore, to ſuch miſcellaneous matters, and certain recurring affections too trifling to be ranked as Diſeaſes, this volume is annexed; and it is hoped, may contain every thing on which the moſt Inexperienced can wiſh for information, without being tedious by enlarging upon trifles. In all matters of importance a becoming firmneſs has been adopted, but I have not equally inſiſted upon others, wherein the manners of a refined age cannot comply, nor have urged any peculiar modes which the Generality may not adopt. Should any opinion be more obſtinately maintained, it is, probably, in relation to the Aliment moſt adapted to new-born Infants; an article frequently alluded to in the following pages.

In a view to this, an *Introduction* is given on the Nature and Properties of Human-milk, as more eſpecially connected with the ſubject of this volume; which, it is hoped, will exhibit a Plan as rational in deſign, as the author is led to believe it has been ſucceſsful in its application.

PREFACE

In a view to this, an Introduction is given on the Nature and Properties of Human-milk, as more especially connected with the subject of this volume; which, it is hoped, will exhibit a Plan as rational in design, as the author is led to believe it has been successful in its application.

A COMPLETE ANALYSIS

OF THE

HOLY BIBLE,

BY WAY OF

QUESTION AND ANSWER.

A COMPARATIVE

Of the Milk of Women, the Cow, Goat,

By M. BOYSSOU of *Aurillac*

Quantity of Milk.	*Names of the ſeveral Animals.*	*Their Nouriſhment, &c.*	*Ages of the Milks.*	*Quantity of Butter.*
One Mark-pound Weight. (8 Ounces.)	Woman's milk.	Inhabitant of a City.	7 months.	4 drachms, 48 grains.
Ditto.	Cows milk.	Freſh Paſturage.	6 weeks.	3 drachms, 45 grains.
Ditto.	Goats milk.	Ditto.	3 months.	4 drachms, 24 grains.
Ditto.	Aſſes milk.	Ditto.	2 months.	10 grains.
Ditto.	Sheep's milk.	Ditto.	3 months.	5 drachms, 40 grains.
Ditto.	Mares milk.	Ditto.	2 months.	6 grains.

A comparative ANALYSIS, by ABRAH. VAN-ST
Dauphin; and NICOL. BONDT, *A*

Scale 100.	*Cream.*	*Butter.*
Cows milk.	$4-\frac{1}{16}$.	$2-\frac{11}{16}$.
Woman's.	$8-\frac{11}{16}$.	3
Goats.	$7-\frac{15}{16}$.	$4-\frac{9}{16}$.
Aſſes.	$2-\frac{15}{16}$.	—
Sheep's.	$11-\frac{9}{16}$.	$5-\frac{13}{16}$.

IVE ANALYSIS

Goat, Aſs, Sheep, and the Mare;

rillac in *Upper-Auvergny.*

ntity Butter.	*Quantity of Cheeſy Matter.*	*Quantity of Saccarine Salt.*	*Quantity of Extract.*	*Produce or Extract in Bal. Mariæ.*
achms, grains.	1 drachm, 48 grains.	6 drachms, 48 grains, in 4 cryſtalliſations.	1 drachm.	1 ounce, 8 grains.
achms, rains.	5 drachms, 51 grains.	4 drachms, 40 grains, in 5 cryſtalliſations.	½ drachm.	9 drachms, 42 grains.
achms, grains.	7 drachms, 48 grains.	3 drachms, in 4 cryſtalliſations.	½ drachm.	2 ounces, 16 grains.
grains.	2 drachms, 16 grains.	6 drachms, 16 grains, in 6 cryſtalliſations.	1 drachm.	7 drachms. 12 grains.
achms, grains.	7 drachms, 30 grains.	3 drachms, in 4 cryſtalliſations.	½ drachm.	2 ounces, 16 grains.
rains.	2 drachms, 48 grains.	4 drachms, 48 grains, in 5 cryſtalliſations.	2 drachms, 36 grains.	7 drachms, 12 grains.

AN-STRIPRIAAN LUISSIO, *Phyſician* to the
NDT, *Phyſician* at *Amſterdam.*

utter.	*Cheeſe.*	*Sugar.*
—$\frac{11}{16}$.	8—$\frac{15}{16}$.	3—$\frac{1}{16}$.
	2—$\frac{11}{16}$.	7—$\frac{5}{16}$
—$\frac{9}{16}$.	9—$\frac{1}{8}$	4—$\frac{3}{8}$.
—	3—$\frac{5}{16}$	4—$\frac{1}{2}$.
—$\frac{13}{16}$.	15—$\frac{3}{8}$.	4—$\frac{3}{16}$.

Ditto.	Sheep's milk.	Ditto.	3 months.	5 drachms, 40 grains.	7 drachms, 30 grains.	3 drachms, in 4 cryſtalliſations.	½ drachm.	2 ounces, 16 grains.
Ditto.	Mares milk.	Ditto.	2 months.	6 grains.	2 drachms, 48 grains.	4 drachms, 48 grains, in 5 cryſtalliſations.	2 drachms, 36 grains.	7 drachms, 12 grains.

A comparative ANALYSIS, by ABRAH. VAN-STRIPRIAAN LUISSIO, *Phyſician* to the *Dauphin*; and NICOL. BONDT, *Phyſician* at *Amſterdam*.

Scale 100.	*Cream.*	*Butter.*	*Cheeſe.*	*Sugar.*
Cows milk.	4—$\frac{1}{16}$.	2—$\frac{11}{16}$.	8—$\frac{15}{16}$.	3—$\frac{1}{16}$.
Woman's.	8—$\frac{11}{16}$.	3	2—$\frac{11}{16}$.	7—$\frac{5}{16}$
Goats.	7—$\frac{15}{16}$.	4—$\frac{9}{16}$.	9—$\frac{1}{8}$	4—$\frac{3}{8}$.
Aſſes.	2—$\frac{15}{16}$.	—	3—$\frac{5}{16}$	4—$\frac{1}{2}$.
Sheep's.	11—$\frac{9}{16}$.	5—$\frac{13}{16}$.	15—$\frac{3}{8}$.	4—$\frac{3}{16}$.
Mares.	[illegible]	—	[illegible]	[illegible]

BOSTON MEDICAL
MAR 29 1904
LIBRARY.

INTRODUCTION.

ON THE PROPERTIES OF HUMAN-MILK.

IF facts are the baſis of ſound reaſoning and the ſource of improvements in ſcience, they will be aſſiduouſly cultivated by every inveſtigator of the laws of nature; perſuaded that, howſoever miſapplied for a ſeaſon, they muſt eventually confirm his maxims, or correct his miſtakes. In this perſuaſion, the author's attention has been awakened by ſeveral publications, but eſpecially by ſome later ob-

ſervations upon *Human-milk*, by Dr. CLARKE of *Dublin*.*

SUCH a ſubject, while it arreſts the ſpeculation of the natural philoſopher, will further claim the phyſician's attention in regard to the influence which the diet of infants muſt ever have on their health, eſpecially that nouriſhment which Nature herſelf hath, in every climate, provided for them, at their birth: for it is only from a due acquaintance with this, that Art is likely to ſupply the fitteſt ſubſtitute when the natural cannot be procured. Nor can the inquiry be deemed ſuperfluous in a treatiſe embracing both the means of prevention and cure of their diſeaſes, nor form an improper Introduction to this volume. And it being Dr. CLARKE's expreſs deſign to diſpute not only ſome of the ſuppoſed conſtituent

* Obſervations on the Properties commonly attributed to *Human-milk*; on the Changes it undergoes in Digeſtion, and the Diſeaſes ſuppoſed to originate from this Source in Infancy. *Tranſactions of the Royal Iriſh Academy*, *anno* 1786.

parts

parts and properties of *breaſt-milk*, and eſpecially that of any true curdy principle; but alſo various ill effects conceived to be produced by it in ſucking infants, and the means of relief; I ſeem to be compelled to take ſome notice of that work. Indeed, the ſpirit of inquiry manifeſted in the Eſſay is truly laudable, and the experiments ſet on foot are worthy the notice of every practitioner in medicine; not to add, that the eſtabliſhment of the fact,* whatever it may be, is likely to

* Dr. RUTTY, indeed, made the like experiments in the year 1762, and Profeſſor YOUNG ſince, though with a leſs decided opinion, from ſimilar reſults: and it is preſumed, that the experiments made in conſequence of the preſent inquiry, have ſet this matter in its true and proper light.

How to account for the difference of Opinion from the ſame experiments, or for their ſeemingly different reſults, conſiſtently with the honour of thoſe who profeſs to have made and reported them, with equal attention and integrity, may be leſs difficult, perhaps, than might be imagined. In regard to the principal point in debate however, I conceive, that ſome gentlemen have taken certain congelations for true

to become of general uſe; though practitioners, it is preſumed, will not readily agree with Dr. CLARKE in regard to the extent to which he carries his ſentiment, any more than in all the inferences he would draw from it.

INDEED, when his Obſervations fell in my way, I was, from the firſt, not a little ſurpriſed at the confidence with which he oppoſed a ſentiment almoſt univerſally adopted; and I determined aſſiduouſly to inveſtigate the matter for myſelf. For this, I knew I had opportunities equal to thoſe of Dr. CLARKE, and I pleaſed myſelf with the idea of being, at any rate, a certain gainer; as I ſhould, at leaſt, get at a fact which muſt in the reſult be

curd, without putting them to the proper teſt; whilſt others, from the like neglect, have overlooked ſmall portions of it, which have been blended with other matters; but eſpecially have too much neglected one obvious, though leſs common mode of diſcovering it; or in the few experiments they may have made in that way, have not allowed ſufficient time for the curd to form; as will hereafter appear.

favour-

favourable to my general purſuits. I muſt acknowledge, that I was inclined to ſuſpect the Doctor had been miſtaken in toto, until repeated experiments, by various means, and under a variety of circumſtances convinced me, that there is certainly much leſs curd in *human-milk* than had been commonly ſuppoſed, and that whatever the preciſe quantity might be, it is not very eaſily detected by runnets and acids; ſince in far the greater number of experiments made upon *freſh* milk, not the leaſt could be perceived, though in a few, I ſeemed to be ſatisfied at the time, that there was a ſmall portion of true curd.*

Surpriſed as I, indeed, was at the firſt reſult of theſe experiments, threatening the ſubverſion of an idea, which howſoever unfounded, had been but little ſuſpected; no ſooner did the eſſence of the fact ap-

* Mr. NAVIER long ago, and Dr. FERRIS in his *Harveyan* Diſſertation, at *Edin.* anno 1782, have adopted this ſentiment.

pear

pear to be eſtabliſhed, than my wonder not only ceaſed, but I conceived there was every reaſon to imagine that *human-milk* ſhould be very much of the nature Dr. CLARKE had ſuppoſed; though he ſhould over-rate, the reſult of his experiments, or his inferences be unfounded; as I have ſince proved to be the caſe. It may be ſuſpected, indeed, that a partiality for a mode of practice that myſelf and many others had long taken up, might naturally render me anxious to ſupport it at any rate, and to accommodate every fact to my prejudices. However this may be, I found that the attempt, in the preſent inſtance, required very little pains or application, and terminated in the perfect ſatisfaction of my own mind; ſince the like ſtubborn things (which are met with every day in the treatment of infants) cannot be accounted for but in the way I have all along done; and muſt evidently demonſtrate the exiſtence of an *acid* in the firſt-paſſages of infants, of what *nature* ſoever the food may be

be on which they are ſupported. How this attempt was executed is now of very little importance to lay before the reader, ſince the mode and number of experiments I have ſince made on *human-milk*, prove to a demonſtration the conſtant preſence of curdy or true cheeſy principles, and muſt therefore totally ſubvert the principal arguments and inferences of Dr. CLARKE, were they much more ſpecious than they are. I ſhall therefore enter no further into ſuch arguments wherewith a long experience has furniſhed me, reſpecting the tendency to acidity in the firſt-paſſages of infants, (which became ſo neceſſary upon the ſuppoſition of there being *no* curdy principles in human-milk,) than the acknowledged ſmall proportion of true curd may ſeem to demand; though, (as above hinted) theſe might be ſufficient to prove the point, were there even no curd at all to be diſcovered in *human-milk*. The ſmallneſs of its proportion, however, with the reſiſtance it offers to acids, as juſtly ſtated by Dr. CLARKE, is ſtill in

my

my opinion as agreeable to reaſon, as the experiments upon which the ſentiment is founded appear to be concluſive.

MANKIND, during infancy, is certainly amongſt the moſt feeble of all animals that are nouriſhed in the like mode by the parent, and is liable to more complaints, eſpecially to diſorders of the alimentary canal. It is reaſonable, therefore, to conceive, that his aliment ſhould be of the moſt eaſy digeſtion, light, thin, and very nutricious; at once affording as little labour to the ſtomach as poſſible, and eaſily convertible into chyle, or blood. We accordingly find *human-milk*, though very thin, exceedingly nutricious, owing to the great proportion of the fat or buttery part, and of a ſaccharine whey, with which it abounds. It is alſo eaſier of digeſtion than moſt other milks, owing to the ſmaller quantity of curd it contains;* which, while it is leſs nutricious than

* *Aſſes-milk* appears to have leſs curdy principles than any other milk I have analized.

the

the other parts, is alſo much more difficultly digeſted, or converted into chyle. And this I am now perſuaded is really the caſe; *human-milk* certainly contains leſs curd than moſt other milks; and the public is much indebted to the reſearches of Dr. CLARKE, as far as they may have led to the eſtabliſhment of this fact: but let us be careful that we do not draw as unjuſt inferences from truth, as have been ſuppoſed to ariſe from error.*

For does it follow, that if a theory be ſomewiſe erroneous, our practice muſt neceſſarily be wrong? I think not; being perſuaded that experience, and the cloſeſt attention to facts, will confirm the general mode of practice enforced in the ſeveral editions of this work, and in ſome part before recommended by HARRIS and

* I am ſorry to find Dr. CLARKE expreſſing a ſuſpicion that his opinion may not be readily embraced by other phyſicians. There are, doubtleſs, many who are glad to collect facts from any quarter, and to entertain truth in every form; and ſuch will always be open to every well ſupported inference from them.

his

his followers. Let us, however, conſider the arguments and inferences alledged by Dr. CLARKE againſt the hypotheſis of a prevailing acidity in infants, and noxious coagulation of the milk,* which writers on their complaints have uniformly eſtabliſhed; and contrary to Dr. CLARKE, conceive to be a principal ſource of their complaints.

Not that they attribute almoſt all the diſeaſes and fatality amongſt infants to that ſource *alone*, as Dr. CLARKE has imagined; who does not allow due weight to other co-operative circumſtances they

* By the term coagulation, or curdy matters, made uſe of in this and other places, it is not meant to aſſert, that the milk always ſeparates into proper curd; it having been granted, that although it certainly does contain true curd, it is not ſo readily ſeparated by acids (out of the body) as the curd of quadrupeds is; but as human-milk abounds with an oily or buttery part, it is diſpoſed to jelly or coagulate into a pretty firm maſs offenſive to an infant's ſtomach. And this kind of coagulation alſo takes place out of the ſtomach, from an admixture of an acid with human milk, equally as with cows.

mention,

mention, conſidering them merely as prediſponent cauſes; particularly the extreme delicacy of their frame. For it is certainly through this extreme delicacy, that infants ſink under complaints, which to adults are commonly little more than inconveniences, and prove in ſome reſpects an advantage, by exempting ſuch habits from the more dangerous diſorders of athletics.*

The atony of infants, therefore, whilſt it is a prediſponent cauſe, proves likewiſe an occaſion of the ſeverity of their complaints, and of the great fatality attending them; and this fatality ariſes from diſorders of the ſtomach and alimentary canal: for how very few infants die in the firſt months, in whom theſe parts are not, both at *firſt and laſt*, the evident ſeat of the diſeaſe; and with what difficulty are many others preſerved from ſimilar complaints, eſpecially children brought up by hand?

* *Acidum eructantes non ſunt pleuritici.* HIPPOC.

BUT I proceed to the particulars ſtated by Dr. CLARKE; who having purſued this important ſubject at ſome length, and given his arguments every due advantage, I beg leave to beſpeak the reader's pardon, if in following him through it, I ſhould ſeem diffuſe, if not tautological, in purpoſely ſtating diverſified views of facts, in order more clearly to exhibit their decided reſult.

THE firſt Obſervation of Dr. CLARKE that I ſhall notice, regards the fact in queſtion, and upon which he grounds his objections both to the concurrent ſentiments and practice of writers on the diſeaſes of infants.

"Women's milk, (ſays Dr. CLARKE) in a healthy ſtate, contains no coagulable, mucilaginous, or cheeſy principles, or that it contains ſo very little as not to admit of ſenſible proof."

COAGULATING principles, unleſs that term be uſed in a very preciſe and limited ſenſe, every nurſe muſt have frequently obſerved, at leaſt in their effects; ſince large

large flakes frequently appear in the matters thrown up from the ſtomach of unhealthy infants. Whether theſe congelations be owing to ſome ſmall portions of curd, or cheeſy principle the milk certainly contains, (which may poſſibly be too ſmall to account for their frequency and quantity;) or to an oil, fat, or butter, is not of importance to the fact. For *human-milk* certainly contains a much larger proportion of cream, or fat, than cow's milk does, as is evident both from the natural, as well as an artificial ſeparation of it by different kinds of acids. And perhaps this, as I ſhall have occaſion to remark, might ſerve to account for the ſymptoms of acidity, and the rancid and acid matter ſo prevalent in infants, and for the various effects of abſorbent, alcaline, and lightly cordial remedies, without a reference to any *true curdy principles* in *human-milk*; which it is preſumed, however, Dr. CLARKE in this place preciſely intends.

I proceed, therefore, to obſerve, that the aſſertion of Dr. CLARKE as to this great point in queſtion, is, in no view, ſtrictly juſt; ſince it is inſiſted, that there certainly is a portion of true curd in human-milk; which as Dr. YOUNG has remarked, ſeparates ſpontaneouſly. Dr. CLARKE in his remark upon this obſervation, I know not why, concludes that it is ſtated by Dr. YOUNG merely as "matter of opinion, and not the reſult of any experiment." Nothing further, however, is neceſſary than *to make it*, and to wait a ſufficient time for the reſult; no particular degree of heat being neceſſary, though ſo ſtated by Dr. YOUNG. But whence it is, that runnets, acids, and ſpirits do not always ſeparate any very ſenſible quantity of this curd in the courſe of eight and forty hours, as they conſtantly do from cow's milk, and wherefore a much longer time ſeems to be neceſſary for its ſpontaneous ſeparation, I am not chymiſt enough to offer any

any opinion, and therefore confine myſelf to the fact: obſerving, however, that this peculiarity is, doubtleſs, to anſwer ſome wiſe purpoſe, and very probably, may be a principal reaſon of women's-milk agreeing ſo much better with infants, than the milk of every other animal; and it is hoped, may in time furniſh ſome very uſeful practical obſervations.

DR. CLARKE's next Obſervation relates to the time, in which human-milk becomes ſour: upon which he remarks thus.

"IF we find *human-milk* out of the body ſo very ſlow in running into an aceſcent ſtate, does it not afford ſtrong preſumptive evidence, that the milk of nurſes cannot be ſo very prone to run into acidity in the ſtomach of infants as authors endeavour to perſuade us?"

To this it may be replied, that though human-milk, out of the body, does not, indeed, run into an aceſcent ſtate ſo ſoon as cows milk does, (and for the full eſtabliſhment of this fact we are much in-

debted to Dr. CLARKE;) yet I think, that *Experience*, (which muſt be allowed to be full as good evidence as any *Experiments* can be) as fully demonſtrates, that like many other milks, and moſt vegetables, it is much more diſpoſed to occaſion acidity in the ſtomach, than food prepared from pure animal juices. Moreover, it is not uſually ſo ſlow in acquiring an evident acidity, even out of the body, as might be conceived from ſome experiments Dr. CLARKE has induſtriouſly made, and I doubt not as fairly reported; for at the end of four days, and even ſooner, I have ſometimes met with it full as ſour to the taſte as cows milk, kept the ſame length of time, though this is not uſually the caſe;* and when become putrid (by that teſt) which I have known it to be in ten days, it has been equally ſo with cows-milk.† And ſurely it is not ima-

* Dr. CLARKE alſo takes notice of a variety in this reſpect.

† It is worthy of remark, that ſo far from *human-milk* being *uſually* indiſpoſed to be much changed by long

imagined, that human, or any other milk, remains on the ſtomach long enough to become acid from that ſpontaneous ſeparation of parts which takes place in the dairy; and therefore the queſtion is not ſo much, in what *time* it will become acid, as to what *degree*, or by what *means*, this change may be effected: and in theſe reſpects, it is found to differ little from the milk of quadrupeds. For though runnets and acids do not always ſeparate true curd in any ſenſible quantity from breaſt-milk, *out* of the body; yet ſuch curd being found in the pukings of infants when moſt vexed with acidity, (as

long keeping, as Dr. CLARKE has obſerved, it has not only always become putrid before I have thrown it away; but that about three quarters of a pint which I kept (in a baſin) at the hoſpital, only a fortnight, for the purpoſe of collecting the curd by a ſpontaneous ſeparation, had rendered the room, for more than a week, ſenſibly offenſive to every one who entered it; but was ſo very fetid when I ſtrained it off, that the matron who aſſiſted me, being leſs accuſtomed to putrid effluvia than I have been, was diſguſted by it exceedingly.

will be ſtated in its place) ſeems to demonſtrate the *means* of its ſeparation, as well as the *fact* and *degree*.

DR. CLARKE, indeed, ſpeaks of human-milk kept in a phial for more than two years, at the end of which time it was become only moderately acid; whereas I have often found it very ſour, according to his own criteria with ſtained paper, in four or five days; ſo that one would be led to ſuſpect, that like putrid waters, the milk muſt have depurated itſelf by ſome kind of fermentation. And though it was rather ludicrouſly that this idea firſt occurred to my mind, I have been ſince diſpoſed to think, that both human and other milks, when preſerved from the air, are capable of ſuch changes; having obſerved both women's and cows milk, at the end of may weeks, become entirely without taſte or odour.* The latter

* In further vindication of the above ſentiments, the author may, at leaſt, offer the following ſtatement; for the accuracy of which the reader's implicit credit is

latter kept on my mantle-piece, over a large fire, has not been fetid at the end of

is requeſted. It reſpects ſeveral portions of *human* and *cows* milk, with obſervations on their changes taken preciſely as dated below.

On one portion, preſerved in a phial, and well corked, it is noted—

Human-milk, procured, Nov. 22, 1790.
Nov. 25 Now, rather tart to the *taſte*.
26 very ſour.
27 not fetid to the *taſte*.
28 *ſmells* very fetid.
29 fetid *taſte*.
1791, Janry. 1. *very* fetid, now.

I examined this milk juſt before this volume went to the preſs, (in March 1795, not having noticed it before for near a twelvemonth;) and found it turned of a dirty brown colour, and *ſmelling* exceedingly *fetid*.

Another portion of *human* milk, procured within a few days of the above-mentioned, and preſerved in a phial, no better corked, did not at this time *ſmell* at all *fetid*, nor diſagreeably *acid*, although it had ſo ſmelt and taſted, a long time before; was not changed in its colour like the former, but ſeemed merely to have undergone the natural ſeparation into curd and whey.

(I carefully examined theſe two portions of milk, Nov. 11th 1797; and found them in nowiſe changed ſince the former examination in March 1795.)

of five days, and was by no means more offenſively acid to the taſte, than I have known human-milk become in four days. And it is further worthy of remark, that out of ſeveral parcels of human-milk, preſerved under preciſely ſimilar circum-

(While this work was in the preſs May 1799, I examined theſe portions again, and could be ſenſible of no change.)

A portion of *cows* milk drawn a month after the firſt-mentioned, I found at this time (March 1795) changed exactly in like manner in its colour, and decidedly more offenſively *fetid* in *ſmell*.

(This portion on the 11th Nov. 1797, was ſtill moſt decidedly more offenſively *fetid* in *ſmell* than the *human-milk*.) (May 1799, it was in the ſame ſtate.)

Human-milk drawn a few days after the *cows*, was at the ſame time found preſerving its colour, having only ſeparated into curd and whey, and without the leaſt *acid*, or *putrid ſmell*, and having no more acid *taſte* than *cows-milk*, drawn in ſummer, uſually has on the ſecond day; nor was there any noiſe nor fermentation to be perceived from haſtily drawing out the cork, as there was from both the *human* and *cows* milks which had changed their colour.

(On Nov. 11th 1797, this portion alſo continued in the ſtate above deſcribed.) (And in May 1799, it was nowiſe changed.)

ſtances,

ſtances, ſome became very ſour and even putrid to the taſte, ſeveral days before the others ſeemed to be at all changed. And as this variety occurred under repeated experiments, it may aſſiſt in accounting both for the frequency of bowel complaints in ſome ſucking infants which other children are free from, and for the frequent good or bad effects of a change of milk, whether occaſional or more permanent: and has not every phyſician of experience ſeen infants frequently thrown into tormina immediately after coming from the breaſt of an unhealthy mother, or one who has but little milk?

IN regard to the means by which this aceſcency may be produced, we know very well, how very ſmall a portion of the prepared calf's ſtomach is requiſite for making ſufficient runnet to ſeparate the curd from a large quantity of milk, and communicate aceſcency to the whey; and is it at all improbable, that the infantile gaſtric juices, aſſiſted by the natural action of the ſtomach, by ſurrounding and mixing

mixing with the milk in every point, may operate much more powerfully upon it, and diſpoſe it to become ſo ſour and curdy,* as to offend that organ, if it ſhould not ſoon paſs into the inteſtines;† as it is preſumed it ought always to do. Moreover, acidity ſeems to be one of the ſtates into which all animal and vegetable ſubſtances naturally, or very frequently run,‡ in the courſe of digeſtion or fermentation,

* It is elſewhere obſerved, that the ſeparation of the curd from the whey is the natural proceſs of digeſtion.

† In proof of the powerful operation of the gaſtric juices, while in the ſtomach, I may here advert to the well-known fact of that viſcus being frequently found corroded a few hours after death, (as I have myſelf ſeen it;) and I imagine, it is generally, though not univerſally, believed in this day, that the corroſion has taken place ſubſequent thereto, and that the gaſtric juices have only acted upon that part, as they would upon any other animal ſubſtance diveſted of the vital principle.

‡ Perhaps this may not be the proper and natural courſe of digeſtion, as Dr. GEORGE FORDYCE has taken great pains to demonſtrate; yet are the firſt-paſſages in moſt people ſo diſpoſed at times, that through

mentation, equally conſtantly with that putridity or fetor which precedes their diſſolution, or ſeparation into firſt principles; and therefore in a certain degree, probably ought to take place in the ſtomach or ſmall inteſtines, as the fetor does in the lower bowels. The latter is never ſo great in infants as it is in older ſubjects, though adults ſhould for a time live only on a vegetable or milk diet. A principal reaſon, probably, is, that the bile is weaker in infants; but being at the ſame time a leſs powerful corrector of acidity, it is likely, they may be, on that account, more diſpoſed to the latter; and, perhaps, ought to be. Nor can I ſee, wherefore that very probable evidence of an abundant acidity in the firſt-paſſages of infants ariſing from the very ſour ſmell, and curdy appearance of both the

through indigeſtion, acid matters are very commonly formed. And it is worthy of remark, that the late Mr. JOHN HUNTER always found the gaſtric juices lightly acid in every healthy animal that he examined.

vomit-

vomitings and ſtools of many infants, and the *uniform relief* afforded them by a proper uſe of *abſorbent* and *alkaline remedies*, ſhould not have much more weight in the argument, than can be brought againſt it from experiments made on human-milk, out of the body, and its acknowledged indiſpoſedneſs to turn ſour ſo ſoon as cows-milk: for we know, with what extreme caution we ought to apply both chemical and phyſiological experiments to the explanation of the phenomena of diſeaſes. Not to inſiſt again in this place upon the idea already ſuggeſted, that breaſt-milk is not ſuppoſed to remain long enough on the ſtomach to ſeparate into curd ſpontaneouſly, in the manner of cows-milk kept in a dairy; it is ſufficient to advert to facts, both the ſmell and curdy appearance mentioned above, and the relief afforded by medicine, being exactly alike in all indiſpoſed ſucking-infants, as in children who are brought up by hand, although the latter are, indeed, more frequently afflicted

afflicted with ſuch bowel complaints. The great difficulty alſo of adapting food to infants brought up by hand; and the frequent recurrence of all the ordinary ſymptoms of indigeſtion, with the relief frequently afforded them by broths; may ſerve to ſtrengthen the idea of a diſpoſition in the firſt-paſſages to generate wind and acidity in the digeſtion of their food, and to coagulate every kind of aliment capable of coagulation by the gaſtric juices, eſpecially if not in their moſt natural or healthy ſtate.

BUT as ſo much of Dr. CLARKE's argument turns upon there being very little or no *curd* in human-milk, it may be aſked, is it, indeed, a certain fact, that the flaky matters brought off the ſtomach of infants nouriſhed by cows-milk, is uſually *proper curd*, any more than that ejected by children nouriſhed at the breaſt? for it is poſſible it may be the fat, or buttery part, or only a very ſmall portion of proper curd, in the one caſe as well as the other: and if ſo, the whole force of the

the Doctor's arguments, and his conſequent objections to the popular plan of treatment may, poſſibly, fall to the ground; for the ſymptoms, complaints and remedies, in both caſes, it has been ſaid, are the ſame, and are well accounted for by a ſuppoſed prevalent acidity in the firſt-paſſages, and a proneneſs of their contents to be, in ſome ſort, curdled by it.* Of the former I have inconteſtible proofs in ſeveral inſtances, in the pukings of infants nouriſhed only by breaſt-milk, which changed blue-paper red, upon being applied to it the moment they were brought off the ſtomach.

For the like certain detection of true curd, I endeavoured for ſome time to-

* That the acid of the ſtomach is capable of forming *proper curd* I have no doubt, having noticed it frequently, and, indeed, having now by me, preſerved in ſpirits, a portion of above an inch in length, and half an inch in thickneſs, which was many years ago puked up by an infant I was attending; but whether the child was brought up by hand, or not, I do not now at all recollect.—While the preſent edition was in the preſs, another little patient threw up a like piece.

gether

gether to make experiments at the hoſpital, upon the pukings of infants nouriſhed only at the breaſt; but either the nurſes there did not attend ſufficiently to it, or the quantity they could preſerve was always too ſmall, or too much blended with other matters to aſcertain, with preciſion, whether they contained any true curd or not. But ſince that time an opportunity preſented in private practice, in an infant who I was well aſſured was nouriſhed only by the breaſt. Having ſucked very plentifully, the child became ſick, and throwing up a mouthful of ſtrong curd, I took up a lump of it, about the ſize of a nutmeg, which adhered together firmly, and was pretty free from other matters; leaving behind in the baſin a larger quantity divided into ſmall portions, and too much entangled with a viſcid phlegm to anſwer my purpoſe. The portion I took out, together with ſome ſlimy matter adhering to it, weighed twenty grains, and when ſeparated from every thing that could

could be ſqueezed from it, or evaporated by heat, exhibited one grain of hard, caſeous matter, which expoſed to the flame of a candle, burned, and ſmelt like coarſe cheeſe; but being before diveſted of all its oil or butter, was incapable of being melted. And according to ſimilar experiments made upon human-curd, dried in different degrees, I imagine that the above mentioned portion, previous to its being reduced to the conſiſtence of hard cheeſe, might contain ſix or eight grains of ſoft curd.

I THINK this may be conſidered as a deciſive proof, that the gaſtric juice can ſeparate curd from breaſt-milk in the ſtomach of infants, and I believe is no uncommon thing;* nor was it

* By this mean, as I have elſewhere remarked, that in the ordinary courſe of digeſtion, the thicker parts are always ſeparated from the whey; but as breaſt-milk abounds with oil or butter, the viſcid matters thrown up often appear more like clotted-cream than true curd: nevertheleſs, either from the milk remaining for an undue time in the ſtomach; or from an exceſs

it long before I met with another inſtance equally ſatisfactory. This infant at eight months old was attacked with ſevere peripneumonic ſymptoms, which were at that time epidemic among children; and ſeveral times threw up curdy matters ſoon after taking the breaſt, which was its only nouriſhment. The nurſe twice preſerved the cloth upon which they had been received, from which I ſcraped them, and after properly preſſing and drying them, I found, that about the one third part turned out to be pure caſeous matter,

ceſs of acidity; or perhaps other circumſtances concerned in digeſtion not always known to us, the ſeparation of the component parts becomes ſometimes more complete, and true curd appears. How far this may be owing to infants being in an ill-ſtate of health, to fever in particular; or ſimply to weak digeſtive powers, and a depraved ſtate of the gaſtric juice; time and attention to their complaints may poſſibly diſcover: but at preſent I am inclined to think, that the gaſtric juices, (which are at all times lightly acid,) always poſſeſs this property, as they certainly do of ſeparating the curdy part of *cows* milk, if it ſhould happen to ſtay a ſufficient time on the ſtomach. This we alſo know to be the caſe with many adults.

burning in a candle, and inſoluble like the former; and in this hard and dry form, weighed a grain and a half.*

Now, if by the above, and other arguments and facts, it ſhould appear, that human-milk, from whatever cauſe, does actually become ſour and curdy, in different ways, and that infants are frequently injured by it; the leſs diſpoſed thereto it may naturally be, the more we may, indeed, be led to admire the wiſdom of Providence, that Women's milk ſhould, in that reſpect, differ from the milk of many other animals; yet mere preſumptive evidence againſt its frequently turning ſour, in the ſtomach of infants, cannot invalidate the fact.

Dr. CLARKE himſelf, indeed, ſeems to be aware that there may be reaſons for ſuch a ſuppoſition, and therefore ſays,

* My reaſon for evaporating the ſoft parts of the curdy matter ſo completely, by expoſure to a ſtrong heat; was to demonſtrate beyond all doubt that it contained *true curd*, by bringing it to the ſtate of the coarſeſt kind of cheeſe, in which there is no oil or butter.

" In

"In the adult ſtate, we know that there are few morbid cauſes leſs noxious to the human body than acidity, and few more ſubject to the controul of medicine."

THIS poſition though in a certain ſenſe, a very fair one, is not wholly ſo, when taken with all the inferences which Dr. CLARKE would deduce from it: for if the acidity be very great, and the cauſe permanent, (as is ſometimes the caſe) though alkalis may be adminiſtered in ſufficient quantity to neutralize the acid; the acidity returns again, and prevails even for years, in ſpite of the uſe of every kind of alkali, of columba-root, bark, ſteel and other tonics, unleſs the ſtate of the ſtomach be changed by them, and the digeſtive powers ſtrengthened. Indigeſtion naturally produces acidity, and is increaſed by it, as we ſee in many pregnant women, and in various affections of the ſtomach, particularly when it is diſeaſed in a morbid way.—A gentleman who died of a ſchirrhus in the ſtomach, which I after-

wards examined, was tormented for the laſt ſix months of his life, with an inceſſant acidity, which though often relieved, eſpecially at the beginning, by magneſia, aqua kali, natron ppt. and other ſimilar remedies, was never for one hour entirely removed; ſo that he ſpat up acid matters all the day long, and died, after a very tedious illneſs, perfectly emaciated, though he took a ſufficient quantity of food of different kinds.

Dr. CLARKE goes on to make further conceſſions.

"But granting (ſays he) ſuch acidity to prevail in infants, we are in poſſeſſion of many harmleſs medicines (called abſorbents) capable of neutralizing acids, and thus forming innocent *compounds.*"

WE have, indeed, many *uſeful* remedies in ſuch caſes, but none that will certainly remove the complaint, either in infants or adults, until the ſtate of the ſtomach be changed; which in infants is often effected by time. For comparatively light as the evils of a diſpoſition

to

to acidity moſt certainly are, when it is light or tranſient, it becomes even in adults a ſource of manifold infirmities, when depending upon ſome permanent cauſe, as has been above ſtated, which cannot fail occaſioning an almoſt daily return of every troubleſome ſymptom. A viſcid phlegm alſo, inſtead of a harmleſs compound, often reſults from the alkaline remedies and natural acid, (commixed, as they may be with other heterogeneous matter) which though inſipid, is very indigeſtible; and at other times, a more offenſive acrid matter is formed in the ſtomach of many adults, and is with difficulty got rid of where the digeſtion is weak; and is continually adding to the complaint. Every practitioner muſt have met with many ſuch caſes; and from one more immediately under my eye, whereby I was for a long time witneſs to the effect of an atonic ſtate of the ſtomach, I can ſpeak very confidently to this point. This patient was of a ſpare, and delicate habit, very ſober, and re-

markably free from almoſt every complaint, but thoſe immediately ariſing from a weak ſtomach, as it is called. This ſenſible organ, however, was eaſily put out of order, eſpecially by vegetables, milk, and ſimilar things diſpoſed to generate wind or aceſcency in their digeſtion, and was at ſuch times loaded with acidity; which though often corrected by alkalis and abſorbents, the ſtomach would, at other times, eject matters in ſo very acrid a ſtate as would inſtantly render the fauces of a deep ſcarlet hue, produce ſoreneſs of the throat, falling of the palatum molle, exceſſive hoarſeneſs, and ſome difficulty in ſwallowing, which would remain for many hours. After long vomiting, a bitter matter would come up, ſometimes of a light, at others, of a deep green colour; but rarely yellow, though evidently bilious. Sometimes, upon taking alkalis and abſorbents previouſly to vomiting, the acid would be neutralized, at others, no quantity would render the juices bland; but inſtead of an acid, a heavy, acrid,

and

and moſt viſcid phlegm would be ejected; inflaming or flaying the fauces, in the manner juſt mentioned, and in this ſtate no kind of medicine had any good effect; though previous to the *acid* matter being changed into this *acrid* ſtate, alkalis and abſorbents very frequently prevented vomiting; which, however, nothing could do after the contents of the ſtomach loſt their *acidity*, and became *acrid:* ſo far were they from being uſually converted into a *harmleſs compound.* It was only after being many years tormented in this way, and having daily recourſe to alkaline and abſorbent remedies, columba and bark, joined with ſteel, and other powerful tonics, with exerciſe and a ſcrupulous attention to his diet, that he was ſenſible of any abiding amendment;* though from the great benefit he at length received, by a ſtrict adherence to ſuch a plan, it may be preſumed he had no morbid af-

* This, perhaps, might be further promoted, by his becoming now full forty years of age.

fection of the ſtomach, though that had been often ſuſpected.

Exceſs of acidity, and an acrid, ropy phlegm are, indeed, the well known attendants on an imperfect digeſtion, and will recur in many adults, feed on whatever they may;* though the evil muſt, doubtleſs, be increaſed by certain kinds of aliments; and of that claſs are thoſe adminiſtered to infants. If adults, therefore of a ſimilar habit to that juſt now ſtated, though in the end often reſtored to perfect health, may continue for a long time greatly tormented, whilſt the moſt powerful correctors of acidity, and known

* I conceive, that this habitual acid affords a too great, and improper ſtimulus to the glands of the ſtomach, exciting both a ſuperabundant and morbid ſecretion. By this means, the gaſtric juice is oftentimes rendered exceedingly viſcid, (in the manner of the ſecretion from SNEIDER's membrane from the ſtimulus of a cold) or afterwards becomes thus tenacious from mixing with the acid, and ill-digeſted contents of the ſtomach. This ſeems probable, from the vaſt quantities of this viſcid and acrid matter which, it has been obſerved, people long vexed with acidity will ſometimes throw off the ſtomach for hours together, and frequently for ſeveral ſucceſſive days.

tonics

tonics are had recourſe to; and if improper food be occaſionally received into the ſtomach, their complaints will at ſuch times be greatly exaſperated; wherefore ſhould it be ſuppoſed, that delicate infants muſt always be reſtored, if the breaſt-milk, as well as other nutriments on which they may feed, be confeſſedly, to a certain degree, diſpoſed to add to the complaint? And can it be urged from any experiments made on human-milk, or will Dr. CLARKE or others affirm, that it is ſo utterly unlike every other milk, and even ſo much more ant-acid than animal food, that it has nothing in it likely to become ſour (ſave in very weakly children) by an admixture with the gaſtric juice?

I NOW proceed to Dr. CLARKE's remarks reſpecting the green colour ſometimes obſerved in infants ſtools. Dr. CLARKE doubts of the exiſtence of the ſuppoſed predominant acid, of which that colour has been imagined to afford ſome evidence, becauſe, he ſays, common acids do not give that tinge to the bile, and that

that only mineral acids give it a green colour.

But as *ſome* kinds of acids can produce this effect, it cannot ſurely be proved, that the natural acid of the ſtomach and bowels cannot effect the like; eſpecially when it is conſidered, that in adult perſons affected with dyſpepſia, *bitter* matters of a *green* colour are frequently ejected after very acid vomitings, as it has juſt now been remarked. And though as Dr. CLARKE obſerves in a quotation from SYDENHAM, "porraceous matters are ejected by children who have been over-purged or vomited, and by healthy adult perſons when ſeaſick," yet the like appearances under ſuch circumſtances can ſcarcely deſtroy the concluſion; ſince all ſuch violent agitations of the chylopoëtic viſcera, by diſordering and perverting their due and natural action, upon which the ſane ſtate of their ſecretions indubitably depends, may ſufficiently account for the ſudden forming of acid, acrid, or any other unnatural

ral and unhealthy gaſtric juice, as well as for the vomiting up of bile, which in its paſſage will certainly be mixed with it, and be ſomewiſe changed from its natural colour. And, indeed, SYDENHAM's reaſoning upon this ſubject, a little further on, is of a ſimilar kind, though expreſſing himſelf in the language of that day, he attributes this foreign, or morbid ſecretion, to a confuſion of the animal ſpirits; which, indeed, for any thing I know, may be a remote cauſe of it. It ſhould likewiſe be conſidered, that it is during the time that infants appear to be affected by a predominant acid in the firſt-paſſages, that the dejections and vomitings are of this green colour. Upon the whole, therefore, the prevalently ſour ſmell of ſome infants ſtools, which Dr. CLARKE thinks ſo very nugatory an argument, ſeems to afford much better evidence of the preſence of an acid, than his arguments can be againſt the change of colour by ſuch a mean. Moreover, I may affirm, that the *green* ſtools of ſucking infants,

infants, and even ſome ſtools that are of a bright *yellow* colour, do certainly contain an acid, having detected it under repeated experiments made with blue paper, the inſtant the ſtools have come away;* however it might turn out in the experiments made by Dr. CLARKE. And I may therefore, poſſibly, be allowed in my turn, to expreſs ſome ſurpriſe at the confident manner in which Dr. CLARKE has taken upon him to diſpute the fact.

BUT Dr. CLARKE obſerves further, that, "Thoſe writers who have laid the greateſt ſtreſs on ſuch appearances in infancy, do not pretend to apply the information to be derived from thence to the treatment of the diſeaſes of adults."

I, probably, do not fully comprehend the import of this obſervation; for the information, *mutatis mutandis* is moſt certainly applicable, and the complaints of each ariſing from acidity are capable of

* Theſe experiments were made before witneſſes at the *Britiſh Lying-in hoſpital.*

cure

cure or relief, in the ſame way, viz. by alkalis, tonics, and aromatics, with a well adjuſted diet. I have intimated, that the doctrine is *partially* applicable, becauſe the bile of adults being more exalted and acrid, or otherwiſe ſtronger, (if I may ſo ſpeak) may not upon meeting with the like acid, change their ſtools juſt to the ſame colour of thoſe of infants; nevertheleſs, the ſtools of adult perſons, tormented with acidity, eſpecially under peculiar aggravations, are of a much *paler* colour, than thoſe of people of much ſtronger digeſtive powers, and poſſibly, through a deficiency of bile. And here it may not be improper to conſider the very material circumſtance of the very different diet to which adults are addicted, as well as the medicines they may take, which, it is well known, often affect the colour and ſmell both of the ſtools and urine in the courſe of a few hours, as the ſtools of infants (though ever ſo green before) are changed in their colour upon taking rhubarb, ſaf-

fron,

fron, and ſimilar medicines;* while the diet of infants being perfectly ſimple, the contents of the bowels are likely to acquire no other colour than that of the bile itſelf, (as is actually the caſe in a healthy child) or ſuch as through their accidental property may be chemically induced by the admixture. Not to add, that the urine in healthy adults is uſually of a much deeper colour than that of infants, and is alſo not unfrequently occaſioned by a certain diet as well as by medicines; and varies with them. And perhaps it may be from a ſimilar natural tendency to a very *dark* colour, that we find the firſt ſtools of new-born infants are not truly green, though often of a *greeniſh-black*; nevertheleſs, there is ſufficient acidity in their gaſtric juices to occaſion the ſtools voided previous to in-

* Spinnage and other things impart their colour to the ſtools of young children, in a way they do not to healthy adults; and perhaps, from their digeſtive powers being weaker.

fants

ſants taking any kind of food, to tinge blue paper red, (as I have found by careful experiments) though ſuch ſtools contain a very large proportion of bile.

THESE obſervations, it is imagined, may apply to Dr. CLARKE's remarks in regard to the colour of the ſtools of adult perſons, vexed with acidity, which he ſays are not of a green colour like thoſe of infants. And in reſpect to ejections from the ſtomach when ſo tinged, it ſeems to have been a conſtant remark, that bile lodged there has been diluted by an acid; to both of which, phyſicians are in the habit of adminiſtering their appropriate remedies.

DOCTOR CLARKE goes on to ſay,

" Upon the whole, I hope it will appear probable to the generality of readers, that predominant acidity in the firſt-paſſages, is by no means ſo general, as to be conſidered as the only, or even principal ſource of infantile diſorders; that ſuch a morbid cauſe may now and then occur in infancy, as in adult age, from a weak-

weakneſs of the ſtomach, coſtiveneſs, or improper food, can admit of no doubt."

THIS inference is ſurely far from being made out from all that has been advanced.—But let us conſider of what the arguments conſiſt. "Human-milk out of the body, does not turn acid ſo ſoon as cows-milk does," (but cows-milk requires twenty-four hours or more;) "nor the common acids curdling the milk of quadrupeds produce ſcarce any ſenſible curd from human-milk; that only mineral acids will tinge the bile of a green colour; and that in the adult ſtate few morbid cauſes are leſs noxious than acidity, or more under the controul of medicine." To conclude from hence, that acidity in the firſt-paſſages ought not to be conſidered as ſo general a cauſe of infantile complaints, or to be of ſuch dangerous conſequence as it may uſually have been imagined, does not appear to me to be perfectly founded; nor to be evidence ſufficient to ſubvert the arguments and evidence adduced in ſupport of that ſentiment,

timent, in connexion with the acknowledged atony of infants. It is true, indeed, that *ex nihilo nihil fit*.—If there be no curdy principles in human-milk, no ſpecies of acid in the ſtomach can bring curd out of it; yet may the combination of an acid and milk offend the ſtomach otherwiſe. It has been obſerved, that all common vegetables, and even bread, are often very imperfectly digeſted by adult perſons with a ſtomach overcharged with acidity, yet is no part of ſuch aliment neceſſarily converted into any thing like *true curd*; though the ſtomach in all ſuch perſons is as certainly offended by the *curdling* of cows-milk.

Nevertheleſs, I have hinted long ago,* that ſimple acidity may not, in the firſt inſtance, or in a general way, be neceſſarily ſo injurious as ſome writers have contended, and that infants ſuffer more ſeverely from an acrid matter, (leſs capable of correction by abſorbents, than by

* In the very firſt edition of the ſubſequent Tract.

aromatics,) which though it originates from a predominant acid, generally becomes ſo very offenſive in conjunction with ſome other cauſe, be that a peculiar atony, or otherwiſe; robuſt children being always far leſs diſordered, though not wholly free from ſome of the vexatious ſymptoms of acidity. Upon the whole, however, I am perſuaded, that acidity is eventually a frequent ſource of miſchief, and that becauſe it is ſo conſtant a conſequence, and further aggravation, of indigeſtion, in ſuch adults as have what is called a weak ſtomach. For it is, perhaps, only in adults of a lax fibre, approaching to the atony of infants, and not in athletics, that we meet with that morbid ſource which Dr. CLARKE obſerves ſometimes occurs in adult perſons. And if the ſtomach, or digeſtion of infants be naturally weak, why ſhould we not expect to find them peculiarly liable to acidity and its conſequences? the ſtate of the ſtomach being certainly the grand ſource of general good, or bad health, at every age.

And,

BOSTON MEDICAL
MAR 29 1904
LIBRARY

And, indeed, were I to ſay no more than that infants, in proportion to the greater weakneſs of their digeſtion, muſt be more diſpoſed to acidity than adults, with many of whom a milk diet *always* diſagrees, (and is the infants' only nouriſhment) it were ſaying a great deal towards ſubverting the whole that has been advanced by Dr. CLARKE againſt its prevalency, in connexion with the general atony of all young infants, being a principal ſource of their complaints.*

Dr.

* SINCE the former edition of this work, and ſubſequent to two or three letters paſſing between us, Dr. CLARKE has offered a few obſervations on ſome infantile complaints in the laſt volume of the *Tranſactions of the Royal Iriſh Academy*. All that concerns the preſent debate, is, an obſervation on green ſtools voided by an infant he was attending, and a very curious obſervation it is; the nurſe having informed him, that they became of a yellow colour after the cloths had lain ſome time in a corner of the room: and this report the Doctor offers to the conſideration of thoſe who conceive the green colour to depend upon ſome acidity in the firſt-paſſages; which he thinks the above change may render further ſuſpicious.

THAT the ſtools of infants, not in perfect health,

Dr. CLARKE concludes by obſerving, that "the young of all the ruminant animals, fed on milk of a much more aceſcent nature, ſuffer no inconvenience from this ſource." To ſuch laconic arguments,

though voided of a bright yellow colour, will turn green upon being kept twelve, or twenty-four hours, muſt have been obſerved by every one converſant with ſick children; but I muſt confeſs that I never before have heard of green ſtools turning yellow, whatever the infant's complaint may have been. I have now been in the habit of paying attention to children's ſtools for many years; and in many inſtances, when not in a daily attendance, a great number of cloths have often been preſerved, for two or three days, for my inſpection; ſo that, were ſuch a change common, I am perſuaded I could not have failed to notice it. What the particular cloths ſhewn to Dr. CLARKE might meet with on the floor, in a corner of the room, to account for ſuch a change; or what other unuſual occurrence there might be in their previous waſhing, I can ſay nothing to; therefore for the preſent ſhall only remark, that ſuch important appearances ought to be frequently obſerved, and accounted for in ſome better manner than the report of an individual nurſe, before any argument can be founded on them to ſubvert the fair inference from innumerable facts.

I think

I think it might be fairly replied, that many ruminant animals can eat, and digeſt, *bones*; and hop about likewiſe when their own bones are broken or diſlocated, without manifeſt injury, or much expreſſion of pain. And in this view I might adduce the remark, made elſewhere,* on the rank which animals ſeverally hold in the ſcale of beings: it being very evident, that beſides the ground of comparative health and diſeaſe ariſing from the bulk and ſtrength of various animals, there is that of their ſeveral ranks in that ſcale, commencing with man, the head, and extending from the invaluable ſheep, the cow, or the horſe, to the loweſt of our domeſtic animals, and to reptiles; the more noble and uſeful (from whatever cauſe) being, I believe, uniformly ſubject to the moſt and ſevereſt diſorders. Thus the fragile worm daily ſurvives ſome kinds of injuries, which the ſturdy ox could not; while the delicate infant would

* Vol. 1; pages, 7, 8. *Note.*

ſink under that, which the lamb could with ſafety endure.—But what ſhould we learn, on the preſent occaſion, by purſuing ſuch compariſons? "Man (ſaid one) is not a fly"—no, nor yet a tyger.—Such arguments, at the beſt, are very equivocal, and one might be ſet againſt another without end. We do not, for inſtance, ſuſpect that quadrupeds in a ſtate of pregnancy, are afflicted with acidity or heart-burn any more than their young are from the curdy principles of the milk by which they are nouriſhed; but we are certain, that many breeding women are tormented with ſuch complaints for a great length of time, feed on whatever they may. It is confeſſed alſo, that the milk of quadrupeds abounds with cheeſy principles, and that human-milk contains a far leſs proportion; (or according to our author, none:) here then is a glaring diſparity in the very point at iſſue; and from which the inference drawn by Dr. CLARKE, (were even his experiments concluſive) does not ſeem more natural than the obſervation

ſervation already advanced on the wiſdom of Providence in abating of that quality in human milk, becauſe a greater propenſity to acidity, or exceſs of a cheeſy principle, muſt, from the atony of infants, render ſuch a quality peculiarly noxious to them.

It has been obſerved, however, that I can myſelf no longer entertain any doubt of the *exiſtence* of this principle in breaſt-milk, though it may vary in its quantity and conſiſtence; nor heſitate to inſiſt, that the reſult of my experiments on human-milk, and infantile green-ſtools, (which it has been ſaid, *do ſtain* blue paper, red) completely overturns all that Dr. CLARKE has advanced, to the entire ſatisfaction of my own mind: but as our contradictory aſſertions, (as to facts) cannot ſatisfy thoſe who have not made the like experiments, I have ſubmitted the matter in a way of fair argument, and appeal to the diſcernment of the reader.

SINCE theſe obſervations on Dr. CLARKE's Eſſay were drawn up, I have, however,

been able to adduce a teſtimony which I conceive will not generally be diſputed, and with which many of my readers may poſſibly have been well acquainted before I was. Had I met with it ſooner, it would, probably, have ſaved me a great deal of trouble; but the *Hiſtoire et Mémoires de la Société Royale de Médicine, année* 1790, might not perhaps have fallen in my way to this day, if my good friend Dr. *Andrij* of *Paris* had not made me a preſent of it; though long after I had completed my experiments on human-milk. It were needleſs in this place to quote, in detail, the experiments there recorded; it muſt be ſufficient to give tables of their reſult,* and to ſay that they correſpond exactly with my own, referring to the volume itſelf for an ample account of the modes of inveſtigation, further properties, and component parts of various milks there ſpecified, demonſtrated by numberleſs experiments, and upon multiplied authorities.

* See the annexed Table.

To

To ſum up the whole, then, upon Dr. CLARKE's own principles, and forbearing for the preſent to inſiſt either upon my own experiments, or others, it may be fairly urged, that, in diſorders of the firſt-paſſages, the matters ejected both by vomiting and ſtools are frequently flaky, coagulated, or curdy; that they have a ſenſibly ſour ſmell; and that the ſtools are often of a green colour, very numerous, and attended with griping pains. That theſe ſymptoms and complaints are removed by ſuch remedies as are allowed to correct acidity in other inſtances, or are mitigated in a greater or leſs degree, as long as ſuch medicines remain in, and are acting on the ſtomach and bowels, and mixing with their contents. That, moreover, every kind of aliment which during its digeſtion is alike peculiarly diſpoſed to produce acidity, both in the adult and infant ſtates, always increaſes the above ſymptoms; breaſt-milk, however, (from a healthy nurſe) the peculiar food of infants, being leſs com-

commonly found hurtful to them, becauſe more thin and lighter on the ſtomach than moſt other food, and having leſs of that true curd found in moſt other milks. But whenever human-milk happens to diſagree, the ſymptoms are exactly the ſame as in infants brought up by hand; though in other inſtances, a recourſe to it, (or even aſſes-milk) frequently proves a remedy, for children whoſe bowels have been diſordered from being previouſly nouriſhed by the ſpoon. And though this fact may indeed, fairly prove it to be far leſs diſpoſed to turn curdy and acid than cows milk, and farinaceous ſubſtances; yet the circumſtance of ſucking children being often afflicted in preciſely the ſame manner, and relieved by the ſame medicines with children brought up by hand, equally demonſtrates the cauſe of their complaints to be exactly ſimilar; and that human-milk, when mixed with the gaſtric juice, is diſpoſed to turn acid, and its component parts to ſeparate improperly, or, perhaps, too haſtily, as in adults

adults whoſe digeſtion is bad. And that on theſe accounts, the milk becomes curdy, occaſioning indigeſtion and wind, which jointly irritate the nervous coat of the ſtomach and bowels, and produce complaints that endanger the infant's life, unleſs remedied by the known correctors of acidity. Nor are theſe effects, by any means, rare occurrences, or confined to tender and delicate infants, as Dr. CLARKE would inſinuate: and on this head I may venture to appeal to his own, and every practitioner's experience, as well as to the mortality in the *Dublin* Lying-in hoſpital.* It may be addded, that a diſpoſition to theſe complaints often continues as long as infants remain at the breaſt, or live on any other milk diet, but are diminiſhed as ſoon as they take freely of animal food; and that this change does not depend merely on their more advanced age, but on the alteration of diet, is pretty evident from the like advantages

* See the note at the cloſe of this *Introduction*.

being

being often obtained by allowing them a little broth, once or more every day, at a much earlier age.

SUCH then are the facts in regard to diet, the alvine diſcharges, and complaints of the firſt-paſſages during infancy; and ſuch are the effects of certain medicines known to correct or abate acidity; and to what ſhall they be attributed, or what can be more naturally inferred from theſe premiſes, than that there certainly is an aceſcent tendency in the gaſtric juices of infants, (uſeful, no doubt, upon the whole,) and a quality in *every kind* of *milk* diſpoſing it to be curdled or coagulated, and become acrid by the admixture? To theſe obſervations might be added that of infants being ſo very rarely attacked with fever, however ſevere or continued their pains, or other complaints may be; and though many good reaſons might, doubtleſs, be given for this exemption, yet none can exclude, the well known aphoriſm of the father of phyſic, before quoted, nor be more appropriate

to

to the occaſion than that maxim, "*acidum eructantes non ſunt pleuritici.*"

I HAVE no deſire to enter into a formal diſpute with any man, much leſs to contend for mere opinions irrelative to practical truth; but ſhould any perſons be determined to diſpute both the inferences and facts I have advanced, let them, at leaſt, tell us *what* it is that ſo uniformly acts as an acid might be expected to do, curdling or thickening the contents of the ſtomach, offending the bowels, producing green and ſour-ſmelling ſtools, with other ſymptoms of indigeſtion recurring ſo uniformly in delicate infants: effects which nothing could ever be contrived totally to prevent, nor can any thing ſo uniformly relieve as *ant-acids* or abſorbents. May it not juſtly be preſumed to be ſomething not eaſily diſtinguiſhed from what we term an *acid* in atonic adults? How much leſs injurious, however, this diſpoſition may be, than that tendency to putreſcency prevailing in the latter, induced by a very different

diet,

diet, and a more exalted bile neceſſary to digeſt it, may be fairly preſumed; and upon which, it has been noticed, I have already given my own ſentiments at large, even in former editions of this work. It may, however, be juſt remarked in this place, that it might, poſſibly, be fairly urged, that infants muſt, therefore, either be exempt from their ſhare of the infirmities of human nature, (unleſs infected by their parents, with ſcrofula, lues, &c.) or be peculiarly liable to diſorders ariſing from acidity in the firſt-paſſages, which are confeſſedly amongſt the ſlighteſt evils, and at the ſame time a probable occaſion of their eſcaping thoſe of a more dangerous tendency.

I CONCLUDE, therefore, with obſerving, that indebted as the Public is, and particularly gratified as I am, by the pains and reſearches of Dr. CLARKE, I cannot but inſiſt, that his inductions are neither properly made out by experiments, nor ſupported by the arguments he has advanced: nor is it, perhaps, perfectly certain,

tain, what eſſential difference there may be between every poſſible combination with human-milk out of the body, and its natural mixture with the gaſtric juice in the ſtomach of an infant. What changes the temperature and action of that viſcus, whether mechanical, or chymical, may be capable of producing, cannot for certain, be either proved or diſproved from mere ſpeculation; ſo that whatever opinion we may form, muſt remain very problematical, any further than matter of fact may diſcover their operation, in the different ſtages of digeſtion, both in atonic and athletic ſubjects. But in fine, whether under all, or any particular circumſtances, any of the gaſtric juices be preciſely what chemiſts would term an acid; or whether the offenſive matters, under an imperfect digeſtion, be uſually of the nature of curd, butter, or phlegm; or whatever theory Dr. CLARKE, or others, may from his reſearches be juſtified in advancing, at ſome future period, cannot weaken the force of any fair inference from facts.

The

The author of this work, indeed, ardently wiſhes, that a practical improvement may be made of every diſcovery; but whatever the improvements may be, it does not ſeem likely from the above impartial ſtatements, that the treatment of *infantile* diſorders recommended by him, and in many particulars very generally adopted for the laſt half century, will undergo any eſſential alteration.*

DIREC-

* Dr. CLARKE concludes with expreſſing a hope, that a ſyſtem of practice more rational than the preſent may be ſtruck out.—What has been the preciſe mode of practice, or its ſucceſs in *Ireland*, I can gueſs only from Dr. CLARKE's ſtatement in regard to the *Dublin Lying-in Hoſpital*; where, paſſing by thoſe years in which an epidemic is ſaid to have raged amongſt the children, the number of deaths has ever been far beyond the average in the *Britiſh Lying-in Hoſpital*, in *London*, where the old plan of treatment is purſued.

IN ſupport of this aſſertion I ſubmit the following ſtatement of the two hoſpitals, (and it is preſumed, not an unfair one,) being copied from the printed accounts of that in *Dublin*, and from certain outlines drawn up, on another occaſion, by Dr. CLARKE himſelf; and contraſted by correſponding extracts from the

the *Britiſh Lying-in Hoſpital*, ſubſequent to thoſe quoted by the Doctor.*

And firſt, from his own ſtatement, it appears, that in the old *Lying-in* hoſpital in *Dublin*,† (reckoning from its firſt inſtitution, when, probably, the furniture was new, and there exiſted no peculiar remote cauſes of diſeaſe) out of 3,746 infants, 241 died *within the month*; that is, between ſix and ſeven in every hundred: but that in the *Britiſh Lying-in* hoſpital, (confeſſedly a very old and ill-contrived edifice) the Doctor reports, (reckoning likewiſe from its firſt inſtitution) only 146 died, out of 3,611; which is only as four to the hundred.

After this period the endemic commenced,‡ and the fatality greatly increaſed; the Doctor then remarks, that after proper means were taken to remove the remote cauſes of that fatal diſeaſe, only 419 infants died out of 8,033 births; that is, from five to ſix in every hundred.

It appears from the printed accounts of the hoſpital, that this period is taken from the year 1783 to 1788, incluſive. But, the like accounts of the *Britiſh Lying-in* hoſpital, during the very ſame years, report that, out of 3,374 children born there, only 95 died; which is under three in each hundred.

BUT to render theſe calculations more immediately applicable to Dr. CLARKE's obſervations on the treat-

* For their perfect accuracy, it is not to be expected we ſhould either of us be anſwerable, as much muſt depend upon the report of inferior officers; but on my own part, no wilful or known miſtatement is offered.

† See Tranſactions of the *Royal Iriſh Academy*, *anno* 1789.

‡ See *Nine-days-diſeaſe*, vol. i. pages 156, 157.

ment of infants, I ſhall to theſe ſix years, add the *Dublin* printed account of the three ſucceeding ones, thereby increaſing the above period to nine. During theſe years, the number of deaths was, indeed, amazingly decreaſed, ſo that the endemic, eſpecially during the three laſt, ſeems to have entirely given way; and it being alſo during this period, that Dr. CLARKE had taken up his new theory both of the nature of *human-milk*, and the early diſeaſes of infants, a compariſon of the number of deaths in the two hoſpitals, and any inference from it, will be brought to a fair iſſue. It appears then, that from the year 1783 to 1791, 12,688 children were born in the *Dublin* Lying-in hoſpital, out of which, 593 died; which is as, $4\frac{3}{4}$ in an hundred. But, in the *Britiſh* Lying-in hoſpital, during the ſame years, 5,233 children being born, only 112 died; which is but little more than two in each hundred. In the laſt of the above years (as well as during many former ones) only two children died in the *Britiſh* Lying-in hoſpital, out of 627 born there; and in the year before that, no more than five, out of 630, which number alſo was not exceeded in ſeveral preceding years,* and ſeems to prove almoſt to demonſtration, that

* So that the number of infants dying in the *Britiſh Lying-in* hoſpital under three weeks old, is uſually far leſs than that of *ſtill-born* children, as Dr. CLARKE ſeems to notice with ſome ſurprize, in regard to one of the *London* hoſpitals he has occaſion to mention; but as it, indeed, ought to be every where, at that early period.—If ſmall things may be compared with great, it may be added here, that ſpeaking from memory, I have reaſon to think, that in my private practice, during the laſt five years, I have not loſt more than

that the entire management of infants in that hoſpital, as well as the practice of the preſent day, muſt be rational and judicious; and is far from calling for a total ſubverſion of the principles by which they have been always regulated.

I add, that in the *Britiſh Lying-in hoſpital*, from the year 1757, (being that in which the hoſpital in *Dublin*

than three infants under a month old; which is much below the average of ſtill-born children, that has fallen to my lot, and of which I have an exact regiſter.

In alluſion to this remark, as well as to add my mite to aſſiſt the inquiries of other calculators, I annex the following ſtatements taken from the regiſters of the hoſpital.

Infants *Still born*.

During the firſt ten years, one in 32.
the ſecond ten years, one in 37.
the third - - one in 26.
the fourth - one in 19.

It hence appears, that the *average* of ſtill-born children has been, as 1 to 25.

THE *Average* of *Deaths*,

During forty years, has been, one in 34.
the laſt eight years,* one in 84.

THE *Average* of *Twins*,

During forty-eight years, one in 86.
Boys to Girls, as 17 to 16.

* It appears from the hoſpital regiſter, that during the laſt five and twenty years, the average of deaths has been conſiderably leſſened, and alſo that a ſmaller proportion of infants has died in the laſt eight than at any period ſince the firſt inſtitution of the Charity; and it may, perhaps, be fairly conjectured, through improvements made in the management of infants, which was not formerly ſo fully conſigned to Phyſicians.

was inſtituted,) to the year 1791, the average of children's deaths has been *under three* in the hundred; but that in the hoſpital in *Dublin*, during the ſeven *moſt ſucceſsful years* it ever experienced, (either previous, or ſubſequent to the endemic) the average is *above four*; though the mothers, uſually, remain there only a fortnight, but thoſe in the *Britiſh Lying-in hoſpital*, three weeks, and ſometimes a month.

I have been at the pains of ſtating this average, in the two hoſpitals, at different periods, that the reader might be competent to judge, *cæteris paribus*, of the probable better practice; and may ſee for himſelf, that, if the management of new-born infants, or the treatment of their diſorders, has been of late anywiſe influenced in *Dublin*, by Dr. CLARKE's new theory, it has not, hitherto, to ſay the leaſt of it, any great claim to the practitioner's attention, on the ſcore of its ſucceſs.

DIRECTIONS

FOR THE

MANAGEMENT OF INFANTS

From the BIRTH.

AMONGST the multifarious matter brought forward in the following pages, the Aliment moſt adapted to Infancy has been ſaid to be one of the firſt importance. Previouſly, therefore, to treating of Diet more extenſively, and the General Management of Children, I ſhall enter into a candid diſcuſſion of that particular, by conſidering the caſe of Infants intended to be reared without the breaſt, or brought up as it is termed by *hand*.

But it would carry me altogether beyond the limits I have aſſigned, were I to

enter ſo far into the inveſtigation of the ſubject, as to ſet forth all the impropriеties of that mode of training up infants from the birth. And I am glad to find by ſome very recent examples among perſons of rank, that there is leſs occaſion for it, than there appeared to be ſome years ago: and, indeed, the miſtake has generally originated with parents, rather than with medical men. It would be unpardonable, however, in a work of this ſort, not to inſiſt how inadequate every ſubſtitute for the breaſt has been univerſally found; and therefore how proper it is, that every child ſhould have it, and even be ſuckled by its own mother, where her health can ſafely admit of it.—Reaſon, inſtinct, experience, all conſpire to ſupport this opinion; and whoever will determine to attend only to matters of fact, may ſoon be convinced of it. Nature herſelf points it out: all the nobler part of the irrational creation is qualified for it, and by inſtinct it obeys—the human race alone, poſſeſſed of nobler powers,

and

and rational diſcernment, perverts thoſe faculties to evade its dictates, and to invent excuſes for refuſing its claims. But puerile, indeed, are all the common arguments againſt it, in the greater number of inſtances; and herein Dr. ARMSTRONG ſeems to have egregiouſly erred, for though, apparently, an advocate for ſuckling, he has laboured for arguments to apologize for the ſpoon and the boat, in too many inſtances.—It were eaſy, perhaps, to produce as ſound arguments againſt eating more than once a day, becauſe ſo many people become diſeaſed from exceſs. On the other hand, a new and very rational argument in favour of breaſt-milk, is advanced by Mr. Moss, who obſerves, that the gaſtric juices of every animal may be ſuppoſed to be the beſt ſuited to act upon its reſpective milk.*

BUT

* The duty of ſuckling has the ſanction of the moſt ancient writers, and is diſtinctly noticed by PLINY. VAN SWIETEN remarks, that one of the Queens of

BUT not only is the breaſt-milk the only natural,* and moſt proper food for infants, (experience demonſtrating, no artificial one to be equally eaſy of digeſtion, and nutricious,) but ſuckling conduces likewiſe to the eaſy recovery of the mother; though ſhe ſhould not be able wholly to ſupport her child by the breaſt, nor to continue ſuckling as long as the infant may require it. But though from

France ſuckled her own ſon, and continued it even during a fever. One of her ladies having, on ſome occaſion, given the child her breaſt, the Queen was ſo much diſguſted at it, that ſhe forced her finger into her ſon's mouth to excite vomiting; unwilling that it ſhould receive any nouriſhment but from herſelf.

* In ſome very northern parts of the world, as thoſe of *Greenland*, and the neighbouring country of the *Eſquimaux*, the breaſt appears to be, in the ſtricteſt propriety of ſpeech, the *only* food that nature has provided for infants; inſomuch that, whenever a ſuckling-mother happens to die, her infant is buried with her: experience (one would hope) having demonſtrated the inefficacy of the hard and coarſe diet which nature has there ſo ſparingly dealt out, it is eſteemed an act of compaſſion to put an end to an infant's ſufferings by plunging it into the ſea.

much

much experience I venture to give this opinion, I do, by no means, intend to aſſert, that every mother is able to ſuckle her child, even for the month, or would do well to attempt it; but I am, nevertheleſs, equally ſatisfied, that many are very well able who do not, and that ſeveral who have only through fear been diſcouraged from doing it, in two or three lyings-in, having afterwards been prevailed on to make the attempt, have gone on with it for ſeveral months, enjoyed better health when they ſuckled than at any other part of their lives, and their children have thriven perfectly well. Art and management will likewiſe afford ſome aſſiſtance, where the natural conſtitution, alone, may not be fully equal to the taſk. In this view, beſides a ſuitable diet, air, exerciſe and a regular manner of living; I will venture to recommend cold-bathing, eſpecially in the ſea, if the ſeaſon of the year ſhould permit; and this not only from my own experience but that of the writer juſt quoted, who aſſerts, that

it

it is often found particularly uſeful in reſtoring the ſtrength, and increaſing the milk in nurſes of a weak conſtitution; adding, that it can never do any harm to a woman merely as a nurſe, where no other reaſon independent of that ſituation, forbids it. The principal caution neceſſary, being, not to bathe too frequently; more than twice, or at moſt three times a week being often injurious to delicate habits.

Thus, beſides the advantages derived to infants, it appears there are others reſulting to the ſuckling mother, and ſome deſerving a further notice. For by this means, where due care is taken, painful inflammations and ſuppurations in the breaſt may often be prevented, as may be fairly concluded, not only from the rarity of ſuch complaints in the *Britiſh Lying-in Hoſpital*, where almoſt every woman ſuckles her infant, but from the like authority of Dr. NELSON, who reports, that "out of 4,400 women who ſuckled their children, only four had milk-ſores, and

that

that theſe had either no nipples or former ſore breaſts." It has likewiſe long been ſuſpected, and of late years more generally imagined, that ſome of the worſt fevers, and more rare ill effects of child-bearing may, generally, be prevented, by ſuffering the milk to flow duly to the breaſts, and be freely drawn from them, though only for the month. Theſe advantages, one ſhould hope, might tend to induce ladies of rank to ſet a general example, by performing this kindeſt and moſt pleaſant office, at leaſt during the month. But it would be unjuſt not to add, that whenever they may purpoſe to aſſume it for a much longer time, they ſhould determine to do it effectually, or they will but injure their children, as well as forfeit many of the advantages and comforts, which in a due execution of it, they would have a right to expect.

For a long time, however, writers have ſucceſſively complained, that, notwithſtanding the many encouragements often brought to the ears, and urged upon parents,

parents, that tyrant Faſhion has prevailed over the good ſenſe and natural feelings of many, whoſe maternal affection can be, in no other inſtance, ſuſpected. It is with great pleaſure, nevertheleſs, that I have been able to obſerve, both in the laſt and preſent editions of this work, that ladies of rank are every year becoming converts to this maternal duty, and are proud of ſupplying their offſpring with that new nouriſhment, wherewith nature hath purpoſely endowed them.

ANOTHER important, and affecting conſideration might be brought forward on this head, which I ſhall, indeed, only touch upon, as it calls rather for the pen of the moral philoſopher than of a phyſician, I mean, the ſacrifice which poor women make in going out to ſuckle other people's children; the ſad conſequences of which are often ſeverely felt by their own, through neglect or miſmanagement, and eſpecially for want of the breaſt. Indeed, no attention of the nurſe can duly compenſate this loſs; and only the moſt com-

common ſubſtitutes for it can, in their forlorn circumſtances, be allowed them. This becomes a ſource of evil, that, I fear, is not uſually thought of, and proves eventually the ſacrifice of many infants every year; a matter of ſerious importance, indeed, to the public, as well as to the families immediately concerned.*

IT gives me real concern to find occaſion for the leaſt unpleaſant reflections upon any part of the ſex I ſo much honour, and upon any of my fair and ſenſi-

* It is with peculiar ſatisfaction, that I congratulate the benevolent in the proſpect of the evils hitherto attendant, being ſhortly obviated to a greater degree than could have been expected, by the admirable inſtitution deviſed by Drs. DENMAN and CROFT; and that it has met with all the ſupport that could be wiſhed for, from families of wealth and rank. A proper houſe in a healthy and convenient ſituation, for the reception of the infant-children of poor women engaged abroad as wet-nurſes, which for ſometime retarded the execution of this benevolent deſign, being now removed, our moſt gracious QUEEN has condeſcended to ſtand forward as its auguſt *Patroneſs*, and their ROYAL HIGHNESSES the PRINCESS of WALES, and DUCHESS of YORK, as the *Vice-Patroneſſes*.

ble

ble countrywomen, in particular. Nevertheleſs, I cannot help ſuſpecting, that wherever any neglect of parental duties may exiſt, whether in regard to ſuckling, or ſuperintending the management of their children,* that does not ariſe from want of health, or ſome equally warrantable excuſe, it can be charged only on the depravity of the age, which inſenſibly corrupts the taſte, and perverts the judgment of many who wiſh to do well. And depravity of manners, when once become general, has ever been conſidered as the leading ſymptom of a falling empire, and

* This ſeems to be the caſe at preſent amongſt the lower claſs of people in *France:* and that nation is therefore very much indebted to the goodneſs of the late Monarch, who to the laſt, was making ſolicitous inquiries through *Europe* to diſcover the beſt ſubſtitute for the breaſt.‡ Should the method recommended in the ſubſequent pages be, amongſt others, adopted, its claim will ſoon be determined; and I venture to hope, will yet be to the advantage of the riſing generation in that kingdom, and elſewhere.

‡ See *Queſtions* propoſed to the *Royal Society of Medicine in Paris*, October 1789, by the late KING's authority.

ought

ought to be pointed out as far as it extends, by every friend to the community, at whatever hazard of giving offence, in every conſpicuous inſtance of it. TACITUS complains of the degeneracy of *Rome* in his days, (though by no means its moſt degenerate era,) lamenting that, while in former times grave matrons attended to their children, as their firſt family concern, they now, ſays he, intruſt them to the care of ſome *Grecian* girl, or other inferior domeſtic.—It is no ſmall ſatisfaction to me, however, to obſerve, that in this country there has been no ground for much complaint on this head, and that the evil is annually diminiſhing; there are alſo examples of the firſt magnitude of a nobler conduct, and one, at the head of all, which were it copied, without exception, in domeſtic life, would prove the glory of the preſent day, and a bleſſing to the riſing generation.—May the time haſten when it ſhall be univerſally followed by her inferiours, whilſt I attempt to point out as far as my obſervation has

ex-

extended, the moſt prudent means of executing this important branch of female duty.

IT may not be amiſs, at the opening of the enſuing obſervations to remark, that the demand for the multifarious directions here offered, as well as all thoſe given by other writers on the management of children, ariſes from the falſe reaſoning of thoſe to whoſe care the infant ſtate is frequently intruſted; who inſtead of being guided by the ſober dictates of nature, have adopted the rules of art, falſely ſo called, or have followed the wild fancies of anile ſuperſtition.

On the other hand, the various tribes of the irrational ſpecies act in a thouſand inſtances more prudently than we do, and being uniformly guided by inſtinct, are led implicity, and ſafely through all their operations. Many quadrupeds, fiſh, and even reptiles ſeem to know what is proper for them as ſoon as they come into exiſtence, and have ſtrength ſufficient to reach after it. In other inſtances, they

are

are guided by the parent, who ſeems to adjoin ſome degree of knowledge acquired by experience, to the inſtinct with which it is naturally endowed. Man on the contrary, deſigned to be the pupil of obſervation, has ſcarce any innate diſcernment; and conſequently his infant race paſs through a long period utterly helpleſs, alike diveſted of ideas to guide, and of ſtrength to manage for themſelves. But to the Parent is imparted both; whoſe province it is to judge for them, and actually to put into their hands or mouths, whatſoever they may ſtand in need of. When the parent, therefore, forſakes the paths of ſimplicity, and lays down arbitrary rules, the reſult of falſe ſcience, inſtead of patient experience; or miſtakes the clamour of faſhion for the voice of nature, confuſion and diſeaſe muſt be the unavoidable conſequence.—Awakened by theſe, man is loudly called upon to return to the ſimplicity of nature, and the reſult of diſpaſſionate obſervation. It is this will be our aim in the work before

us, wherever danger and deviation are connected; aſſured, that the experience of the moſt judicious and ſucceſsful practitioners will applaud the deſign, and confirm the generality of our obſervations.

To this end, let us imagine an infant juſt born, who, doubtleſs, at this moment, calls for our beſt attentions. And firſt, it may be obſerved, that it ought not to be expoſed to any thing that may violently, or too ſuddenly affect the ſenſes: on which account, MOSCHION and ALBINUS have well adviſed, that it ſhould not be expoſed either to great heat or cold, nor to a ſtrong light, nor odours of any kind, however grateful to adults; the unpleaſant effects of which are ſufficiently manifeſted by the infant itſelf.

THE attention will next be called to waſhing and dreſſing it, together with other little offices ſuited to the occaſion. And this firſt waſhing is of more importance than is uſually imagined, being amongſt the *little* things which are often overlooked by writers and others, (and by

ſome

ſome thought of no conſequence;*) but it is not every little thing that may ſafely be neglected, or careleſsly done. In regard to poor people, eſpecially, and infants born in hoſpitals, and other crouded apartments, the importance of proper waſhing is greatly increaſed, the foulneſs left upon the ſkin being a remote cauſe of ſome dangerous endemic complaints.† Some infants alſo are covered much more than others with a thick, viſcid matter, which cleaves ſo faſt to the ſkin, that it is not eaſily waſhed off; which there is, however, another reaſon for doing, as it would obſtruct perſpiration, which can never be duly performed, where the ſkin is left anywiſe foul. On this account, nurſes ſhould be directed to be very attentive to this firſt concern of their infant charge, and whatever waſh they may make uſe of, it ſhould always have ſoap in it,

* Dr. *Hamilton.*

† See *Monſ. Baumes*, on the *Jaundice* and *Meſenteric-fever.*

and the child be well rubbed, eſpecially under the arms, in the hams, and groins, where this mucus is apt to adhere: and to this end, it would be better that no pomatum ſhould be made uſe of, or other greaſe, which tends to ſtop up the pores, and prevent perſpiration; or that nurſes be, at leaſt, very careful the greaſe be afterwards well wiped off. In the ſame view, it were well if it were a common practice to repeat the waſhing for two or three days, with light friction of the ſkin; which it is not improbable might tend to prevent the red-gum and other ſimilar affections of the ſkin, with ſuch other complaints as may ariſe from the ſuppreſſion of inſenſible perſpiration.

After a little time, and ſometimes on the next day, moſt nurſes waſh a child all over with cold water; a practice highly extolled by Dr. ARMSTRONG, as well as many other practitioners. But though no one can be a greater advocate for every thing that is bracing than I am, I cannot approve of this ſubſtitute for cold-bathing,

ing, as it is called; at leaſt, as an indiſcriminate practice. The cold-bath acts on a quite different principle, and is ſo very beneficial, that I could wiſh almoſt every child, eſpecially thoſe born in *London*, were bathed at three or four months old, (provided they be not coſtive, nor feveriſh at the time, have no internal obſtructions, nor the ſeaſon of the year be improper;) which I am certain would remove, or perhaps prevent, many of their complaints.* But to ſee a little infant of a few

* *Monſr. Le Febure de Villebrune* in his tranſlation of this work into *French*, has added a chapter upon *baths*; in which he highly extols the warm-bath, and as ſtrongly controverts the idea of the probable good effects of cold-bathing, and even makes uſe of a long chain of arguments againſt it, deduced, indeed, from an ingenious theory, and ſupported by quotations from the ancients; who practiſed, however, in a very different climate.—The ſhorteſt, and perhaps, the beſt reply to this ſpecious reaſoning, might be given in the well-known mode of DIOGENES to ZENO, whoſe arguments againſt the poſſibility of Motion, DIOGENES laconically refuted, by haſtily getting up, and walking acroſs the ſchool. We have, in like manner, only to

few days old, the off-ſpring perhaps of a delicate mother who has not even ſtrength to

point to the numbers of children and young people, who from very weakly infants, have been rendered ſtrong and healthy, merely from a prudent uſe of the *cold-bath*; and may defy any man to produce the like inſtances of its oppoſite effects when made uſe of with the cautions which every powerful remedy requires. The *Spartan* women, likewiſe, afford us ſufficient evidence of the ſalutary effects of cold-bathing, notwithſtanding the comments made upon the women themſelves, by *Ariſtotle*, as quoted by our author.

AND, indeed, from the ſurpriſing good effects that ſometimes follow the uſe of Cold-baths, I do not wonder that Prieſts, in times of ignorance, have been known to account them holy, and dedicate them to ſome Saint; to whoſe influence certain Cures were attributed.

The ſalutary operations of the cold-bath are, however, eaſily accounted for, from its promoting inſenſible perſpiration, and rendering that excretion leſs readily affected by the impreſſion of the external air.

It may be known to agree with children, when they come out of it warm, lively, and their ſtrength increaſes on the uſe of it. On the other hand, if they continue cold, are diſpirited, and ſeem rather to loſe ſtrength, it may be as often prejudicial.

As a mean of acquiring that re-action and glow, which bathing is deſigned to effect, ſome people have very

to ſuckle it, waſhed up to the loins and breaſt in cold water, expoſed for ſeveral minutes,

very rationally recommended throwing a looſe flannel chemiſe over the child the inſtant it is taken out of the bath. This will not only ſecure from the unpleaſant ſhock ariſing from the cold air, but allow time for friction, along the courſe of the ſpine, which ſhould be continued all the while that an aſſiſtant is employed in wiping the lower extremities, and putting on their uſual covering. If this were duly attended to, I am perſuaded, that both many infants and adult perſons would be benefited by cold-bathing, who for want of that kindly glow, are unable to bear even bathing in the ſea.

But I muſt obſerve, that the abovementioned unpleaſant effects are frequently owing to an improper uſe of bathing, and for want of making a very obvious diſcrimination in the habit of body of different children.—For the tender and delicate, not only ſhould a good quantity of ſalt be put into the bath, but the water ſhould alſo at firſt be a little warmed, and children be brought only by degrees to endure it quite cold, which they will not by this means be the leſs likely to do: or ſhould the water never be perfectly ſo, (but merely below the heat of the ſkin) the advantages of ſuch bathing will, nevertheleſs, be conſiderable;* though the late Dr. HUNTER and others have

* *Hippocrates* ſpeaking of bathing, cautions againſt the two extremes of heat and cold. *De Liquid. Uſu.*

minutes, perhaps in the midſt of winter, (when children are more liable to diſeaſe than thoſe born in ſummer;) itſelf in one

thought differently. It is not merely from the coldneſs of the water that the benefit ariſes, but is rather from the ſubject being ſuddenly immerſed into a very different medium, (if ſo be, that medium be not actually warm) in which the contact of the external air is taken off during the immerſion, and is as ſuddenly reſtored on his being taken out. By this means, the blood is alternately puſhed forward into the extreme veſſels, and ſuddenly repelled to the heart, (in proportion to the coldneſs of the water and the powers of the ſyſtem) and ſuffers an advantageous attrition againſt the ſides of the veſſels. The ſmall paſſages are rendered pervious, and the contractile power of the heart is increaſed, as well as the muſcular fibres proportionally ſtrengthened.—The ſalt added to the water pretty certainly prevents taking cold, whilſt it adds to the ſtimulus on the ſkin, and has therefore a more ſalutary operation on the pores.

The infant having been put quite under water, ſhould be taken out as ſoon as it is poſſible. It ſhould be received in a blanket, and wiped dry with a cloth in the moſt expeditious manner; and as ſoon as it can be dreſſed, ſhould partake of ſuch exerciſe as may be beſt ſuited to its age. There will need no great attention to its being made perfectly dry, as a child will be leſs liable to take cold from a few drops of ſalt-water being left upon it, than by being long uncovered in ſome parts of its body, in an over-caution to wiping it dry.

continued ſcream, and the fond mother covering her ears under the bed-clothes that ſhe may not be diſtreſſed by its cries; has ever ſtruck me as a piece of unneceſſary ſeverity, and ſavours as little of kindneſs, as plunging an infant a ſecond or third time, into a tub of water, with its mouth open, and gaſping for breath, in the old-faſhioned mode of cold bathing: both of which often induce cramps and pains in the bowels, and weakneſs of the lower extremities, but rarely an increaſe of the ſtrength. It ſurely cannot be amiſs, in winter time at leaſt, to take the cold off the water for the few firſt days, which it has been obſerved, will be uſeful in other reſpects; and whenever cold water is made uſe of, it will be quite ſufficient to waſh the child as far as a regard to cleanlineſs may require, which will always be the parts expoſed to the worſt kinds of galling and excoriation: on which account cold water is certainly uſeful. With this view, beſide the nates and groins, the arm-pits, folds of the neck, and parts behind

behind the ears, being alſo diſpoſed to ſlight chafings, may be occaſionally waſhed in like manner, and if the diſcharge be not checked by it, they ſhould be duſted with a little hair powder, the powder of lapis calaminaris, or of ceruſe, or a little white vitriol may be added to the water; which if the excoriations are not very conſiderable, will generally heal them very ſoon: ſhould theſe fail, they may be dreſſed with the red drying ointment of *Bate's* diſpenſatory, which is an excellent remedy in a thouſand inſtances, and has very undeſervedly fallen into diſuſe. But theſe drying remedies ſhould rarely be applied to the ears. In a very acid ſtate of the ſtomach, during the month, particularly where there is a purging with very green ſtools, the parts covered by the cloths are moreover infeſted with a ſtill more troubleſome excoriation, called Intertrigo, and whilſt that ſtate continues, will not be healed by any drying applications. I have found nothing ſo pleaſant, and uſeful in this caſe, as

cover-

covering the parts with the thin ſkin found upon the veal kidney, which ſoftens, and cools them, till the cauſe of the complaint may be removed by the uſe of proper abſorbents. There is a mixed affection of this kind, however, in which theſe parts are not actually excoriated, but are very hard and ſwollen, as well as painful and inflamed; and the affection ſeems to be kept up by the acrid nature of the excretions, though not originally cauſed by it. In this caſe, inſtead of daubing the parts with wetted fuller's earth, gruel, or greaſy mixtures; an embrocation of elder-flower-water, with as much boiling milk as will render it moderately warm, has been immediately efficacious. But one grand mean of keeping children from chafing is to preſerve them very dry and clean;* articles of ſo much importance

* An error worthy of remark in this place, is, that of wearing a pilch (as it is called;) an old faſhion ſtill too much in uſe, and contributes not a little to make children weak: it being originally deſigned to be worn only

portance, that I ſhould have inſiſted much longer upon them, if I had not already far exceeded the bounds I had intended. It may be neceſſary, however, to drop a word more with a view to counteract a vulgar notion, familiar only to common people, that a frequent change of linen has a tendency to weaken new-born children; an abſurd idea that has not the ſmalleſt foundation in reaſon or fact. It is, on the other hand, next to impoſſible, that a child ſhould thrive or be healthy, if the ſtricteſt attention be not paid to cleanlineſs, which is one of the principal articles in which the children of poor people are at a great diſadvantage, and

only for the few firſt weeks after birth, but is often continued for as many months. It can anſwer no poſſible end but that of ſaving a little trouble, ſince inſtead of keeping children dry and clean, it has the directly contrary effect; for if it has received any wet through the uſual cloth laid under it, it ought itſelf to be changed as often as the other, or muſt certainly be damp and uncleanly; whilſt by heating the loins, and lower limbs, it has a manifeſt tendency to relax, and diſpoſe infants to become rickety.

which

which becomes a conſtant ſource of rickets and diſtortions among them. But, indeed, little infants, if healthy, may oftentimes be ſo managed as to be much more cleanly, than even people of great delicacy have been wont to imagine; ſo as even to ſuperſede altogether the uſe of cloths, either by night or day.*

ANOTHER uſeleſs operation practiſed by nurſes, is, that of forcing out the milk from the little breaſts of new-born infants. Some children a day or two after they are born, have the breaſts exceedingly tumid, hard, and painful, containing ſomething like milk; and nurſes imagine it to be a great kindneſs to milk

* I have, indeed, known only three or four inſtances of it, (though there may be many that I have not been made acquainted with;) one of which was in the family of a Lady of rank, whom I was ſome years ago attending. I was there myſelf a witneſs to the good effect of holding a little pan under an infant of only four months old, as it lay acroſs the nurſe's lap; which I was aſſured had been her practice from the month, and that the Lady had obliged her nurſery-maids to do the like with her two former children.

it

it out, as it is called. But I have often been grieved, to ſee a nurſe rudely rubbing, and even ſqueezing the breaſts already in a ſtate of inflammation, and continuing it even for ſome minutes, though the child's cries might convince her ſhe is putting it to pain. In the caſe of inflammation, a bit of bread and milk poultice is the propereſt application, but if the part be not inflamed, it can want nothing at all; though if it be thought ſomething ought to be done, a little oil with a drop or two of brandy may be gently rubbed in, or ſmall pieces of the litharge-plaſter may be applied, and lie on the parts till they fall off of themſelves. I have, indeed, had ſufficient evidence of ſuch conſiderable tumefaction and hardneſs, as to ſatisfy me, that when no violence is offered to the parts, the application of a bread and milk poultice will always prevent either ſuppuration, or other unpleaſant conſequence. I have met with inſtances in which the tumour has been much larger and

harder

harder than I could have ſuſpected on ſuch an occaſion, and yet after continuing for more than a week without any ſenſible diminution or amendment, has ſoon afterwards ſubſided entirely.

HAVING conſidered theſe neceſſary preparations, I proceed to offer a few remarks on the prevailing errors in *Dreſs*.

UPON the firſt ſight of a new-born infant, every one is ſtruck with the idea of its weakneſs and helpleſſneſs; and we often take very improper methods of ſtrengthening it. It is *deſigned* to be weak and tender in this infant-ſtate, as is every other object around us.* Take a ſurvey of nature, from the firſt opening leaves of the vernal flower, or the more delicate foliage of the ſenſitive plant, to the young lion, or the elephant; they are all in

* Nous naiſſons foibles, nous avons beſoin de forces; nous naiſſons dépourvous de tout, nous avons beſoin d'aſſiſtance; nous naiſſons ſtupides, nous avons beſoin de jugement; tout ce que nous n'avons pas à notre naiſſance, et dont nous avons beſoin etant grands, nous eſt donné par l'education. ROUSSEAU.

their

their ſeveral orders, proportionally weak, and cannot exiſt without ſome exterior ſupport. But they ſtand in need of nothing but what nature has prepared for them. If ſeed be caſt into a proper ſoil, it wants only the ſurrounding elements to enſure vigour and maturity. So, if the tender infant be born of healthy parents, and at its full time, it is uſually ſufficiently ſtrong; proper food and nurſing are the elements whoſe foſtering influence it requires—if it have theſe, it will need nothing more.

It is true, it is very weak; but is it therefore to be tight rolled, under the idea of ſupporting it, and giving it ſtrength? It is a bundle of tender veſſels, through which a fluid is to paſs, undiſturbed, to be equally diſtributed through the body, and which are therefore ſurrounded by a ſoft medium, capable of yielding to the impetus of their contents. Hence we cannot but conceive, how injurious any great preſſure muſt be to ſo delicate a frame, which before

fore birth ſwam in a ſoft fluid. But beſides this, the infant requires freedom and liberty on other accounts. The ſtate of infancy and childhood (as Dr. GREGORY obſerves) is impatient of reſtraint in this reſpect, through "the reſtleſs activity incident to youth, which makes it delight to be in perpetual motion, and to ſee every thing in motion around it."

Let us again advert to the irrational ſpecies, whoſe more ſagacious conduct ſo often diſgraces our own. There is no occaſion on which they do not ſeem to conſult propriety; and having a right end in view, they as certainly accompliſh it, and always in proper time—Doth a little bird deſign to prepare a lodging for her young? it is ſure to make choice of the fitteſt ſituation, whether to defend them from dangers, or obtain the moſt convenient ſupply of their wants; if to this end it be neceſſary to conſtruct the neſt of rough and ſtrong clay, it is

ſtill lined with down: the young lie warm and ſecure, but they lie at their Eaſe.

I am not ignorant, indeed, that for many years paſt, the very ancient tight mode of dreſſing infants has been diſcontinued, and for which we were probably firſt indebted to Dr. CADOGAN. It is certain alſo, that for the laſt thirty years, the faſhion recommended by him has been improving; but there is yet room to go forward, and were every tender parent in this country thoroughly ſenſible of its advantages, it would ſoon become faſhionable to ſee children as much at their eaſe on a chriſtening-day, as they are when laid at night in their beds. And I may be permitted to add here, what every modern practitioner has adverted to, that were ſtrings, almoſt in every inſtance, ſubſtituted for pins, phyſicians would ſeldom be at a loſs to account for the ſudden cries, and complaints of infants, which are too often produced by this needleſs

part

part of their dreſs*—A practice, it is to be hoped, which may in time be laid aſide, ſince ſome of the firſt families in the kingdom have already ſet the example.

NATURE knows no other uſe of clothing but to defend from the cold—all that is neceſſary therefore for this purpoſe, is to wrap the child up in a ſoft looſe covering, and not too great a weight of it; to which ornaments enough might be added without doing miſchief. And had this matter been always left to the moſt ordinary diſcretion of parents, this is, probably, all that would have been done; but the buſineſs of dreſſing an infant is become a ſecret, which none but adepts

* A gentlewoman many years ago informed me, that one of her children, after long and inceſſant crying, fell into ſtrong convulſions, which her phyſician was at a loſs to account for, nor was the cauſe diſcovered till after death; when on the cap being taken off, (which had not been changed on account of its illneſs,) a ſmall pin was diſcovered, ſticking up to the head, in the large fontanelle.

muſt pretend to underſtand. The child itſelf, however, diſcovers to us the propriety of ſuch clothing, by the happineſs and delight it expreſſes every time it is undreſſed, and rubbed with a ſoft hand. Whereas, *the art of dreſſing* has laid the foundation of many a bad ſhape, and what is worſe, of very bad health, through the greater part of life. Inſtead, therefore, of a ſcrupulous and hurtful attention to ſuch formalities, nurſes would be much better employed in carefully examining new-born infants in order to diſcover any malformation of parts, eſpecially thoſe concerned in the excretions neceſſary to life, which, it has been ſaid, is ſometimes over-looked.

THE tender infant being dreſſed, and having undergone ſuch other little diſcipline as has been mentioned, is uſually ſo far fatigued by it, as ſoon afterwards to fall into a ſound ſleep. We ſhall conſider it as in this ſtate, and leave it a while to be refreſhed, whilſt I endeavour to conduct my reader through the various

other

other duties which the infant calls for from day to day, till it happily arrives at an age free from the peculiar dangers of infancy.

In the purſuit of ſuch a plan, we meet with a variety of miſcellaneous articles, and though many of them are not of apparent magnitude in themſelves, are in their conſequences highly worthy of notice; which that they may be thrown into ſome kind of order, may all be very well claſſed under the ſeveral heads of the *Non-naturals*, as they are called. Such are, Air; Meat and Drink; Sleep and Watching; Motion and Reſt; Retention and Secretion; and the Paſſions of the Mind: a due attention to which, may prevent many of the evils incident to this tender age—The firſt of theſe was ſaid to be AIR.

THE great importance of this has been ſet forth when ſpeaking of the *Diſeaſes* of infants: I ſhall here in a more particular way obſerve, that the age, conſtitution, and circumſtances of the child, and the

ſeaſon of the year, ought always to be taken into conſideration; *that* being highly proper on one occaſion, which would be very detrimental at another. In general it may be ſaid, that warmth is friendly to very young infants; but they ſhould, nevertheleſs, be inured gradually to endure the cold air, which is abſolutely eſſential to their health. I cannot therefore agree with Dr. ARMSTRONG, who thinks the rich loſe fewer children than the poor, becauſe they are kept warmer. On the other hand, it was aptly ſaid by one, that "a warm nurſery fills a cold church-"yard." In fact, it is not a mere cold, but a damp and confined air, that is ſo injurious to children, and to which the poor are peculiarly expoſed, eſpecially during ſleep. Much caution, indeed, is neceſſary on this head in this unſettled climate, and evinces the neceſſity of parents ſuperintending thoſe to whoſe care they intruſt infant-children, ſince nurſery-maids are often indiſcreet in keeping them too long in the air at a time; which is a

frequent

frequent occaſion of their taking cold, and deters many parents from ſending them abroad ſo often as they ſhould. Another, and a worſe, as well as common fault of nurſes and ſervants, is, that of ſtanding ſtill with children in their arms in a current of air, or even ſitting down with other ſervants, and ſuffering children who can run about, to play at a little diſtance by themſelves, ſit down on the graſs, and ſuch like; the conſequences of which are often a long confinement to a warm room, and either a prohibition againſt going out ſo much as they ought, or a freſh cold owing to ſome of the like irregularities.

But if children be properly clothed and attended to, they will not only endure a great deal of very cold, but of other inclement weather; though it has been obſerved, that caution and prudence are required in training up infants to withſtand, and profit from being abroad when the air is very cold or moiſt. Notwithſtanding, it certainly may be accompliſhed;

and it is a known fact, both amongſt the higher as well as inferior ranks of people, that thoſe children are the healthieſt and ſuffer the leaſt from colds, who are accuſtomed to be abroad in almoſt all kinds of weather. But to render children thus ſtrong and healthy, it is not ſufficient that they be abroad daily in a coach; they ſhould be carried on the arm, and be put on their feet, at a proper age, and partake of ſuch exerciſe, for a reaſonable time, as ſhall keep them moderately warm, and bring them home in a glow, inſtead of wiſhing to ruſh towards a fire the moment they return; ſuch ſudden tranſitions being always improper, and only render children more liable to take cold.

KRUGER has ſome ſuch pertinent remarks on this head as it will ſcarce be thought a digreſſion to tranſcribe. "The "important ſtep" (ſays he,) "a man "takes into this world imparts to him "all the privileges thereof, of which this "is one, the ability to bear the effects of

"the

" the air. Why then debar him from
" this privilege? as he is all his life to
" be encompaſſed with this air, at one
" time cold, at another warm, now moiſt,
" again dry. For the cold of the air ſo
" anxiouſly avoided, brings along with it
" the means that ſecure againſt its own
" inclemency; the great ſtrength of fibres,
" imparted by it to the child, procures,
" by means of a briſker circulation, a
" greater degree of heat, and conſe-
" quently the reverſe of its violent im-
" preſſion. This, indeed, may ſeem un-
" intelligible to thoſe who imagine the
" human body to be only an hydraulic
" machine, conſiſting of innumerable
" tubes, in which the wheel is mov-
" ed without a proper power, conſe-
" quently without a ſufficient reaſon;
" not to thoſe who can diſtinguiſh be-
" tween the effects of nature and art, who
" are appriſed of the power that moves
" the animal body, and that the ſenſations
" are ſuch a power, which ariſe with-
" out our knowledge and our will. To

" ſuch

" ſuch only it will be intelligible, in
" what manner an increaſed reſiſtance,
" produced by the cold in the ſolids and
" fluids, is capable of bracing the heart,
" the ſource of life. From a ſlight know-
" ledge of mechanics we come to un-
" derſtand that the reſiſtance diminiſhes
" that power, which in animal bodies it
" increaſes; come to ſee, that the moſt
" ingenious conſtructions produce no
" manner of motion; that all mechani-
" cal laws are, indeed, perfectly juſt, but
" more accurately to be determined, in
" order to a proper application of them
" to the human body, in which the will,
" imagination, and ſenſations, are the
" ſprings of motion, without which all
" motion would ceaſe, and only leave a
" machine reſembling a water-work, to
" be carried about by wind.—We need
" only appeal to experience, which will
" teach us, that in order to a healthful
" ſtate, we need not be brought up like
" thoſe who are indulged with a bed of
" down, and a warm room, but thoſe, of

" whom

"whom no extraordinary care being "taken, are greatly left to their own "diſpoſal."

It is, indeed, generally owing to ſudden tranſitions only that ſome infants ſo readily take cold. This ſometimes happens as ſoon as they are born, and repeatedly during the month; the ſlighteſt ſymptom of which is that called the *Snuffles*, or ſtoppage of the noſe. This is, indeed, a trifling complaint, but as ſuch, may be juſt noticed in this place. It uſually requires nothing more than a little pomade divine, or other unctuous aromatic to be put to the noſtrils when the child is laid in the cradle; or if this fail, a little white vitriol may be diſſolved in roſe-water, and the oſſa naſi often wetted with it.

IT will be adviſeable, in order to inure infants to the air, that they be ſhort-coated as early as the ſeaſon of the year will permit; but their dreſs ſhould be ſtill looſe and eaſy, and they may continue without ſtockings even for two or three years, and

and boys till they are breeched. As to this change, I think, it would with more propriety be made in the beginning of winter, than in ſummer, as the dreſs upon the whole is warmer, eſpecially about the cheſt, which from having been open for three or four years, it ſeems, rather ſtrange to cover, all at once, at the beginning of hot weather.*

But though I have ſaid children would be as well without ſtockings, for a conſiderable time, I muſt remark, that circumſtances are always to be taken into conſideration. *Mutatis mutandis* ſhould not only be the motto of phyſicians, but of common life, and we ſhould be guided by it in regard to all general rules. For want of this caution in the preſent inſtance, tender children ſuffer exceedingly in ſevere winters, and are diſtreſſed with

* The propriety of this remark was more ſtriking at the time the former editions of this work appeared, when the dreſs of young children was different from what it is at preſent, and to which it may poſſibly revert.

chil-

chilblains merely for want of proper covering to their tender limbs. I have ſeen a child of four years old, the daughter of people of faſhion, whoſe legs were covered with theſe ſores quite up to the knee, and yet her mother could not be prevailed upon in time, to ſuffer ſtockings to be put on, becauſe ſtrong and healthy children are thought to be better without them.

THE ſecond Article under the head of Non-naturals refers to MEAT and DRINK, and is worthy of ample diſcuſſion; having as yet been conſidered only in relation to the expediency of breaſt-milk, where that may anywiſe be procured.

IN the firſt place it may be remarked, that although an infant be ſuckled by its own mother, it certainly can ſtand in no real need of any food, till the time nature will bring milk into her breaſt, ſuppoſing the child be laid to it in proper time; which, doubtleſs, ought to be as ſoon as ſhe may, by ſleep or otherwiſe, be ſufficiently refreſhed to undergo the little

little fatigue that an attempt to ſuckle may occaſion. This method, however unuſual with ſome, is the moſt agreeable to nature, and to obſervations on the irrational ſpecies; who in many things are the very beſt guides we can follow.* And herein, I am conſtrained to differ from a late writer† whom I have more than once quoted with approbation; for by means of putting the child early to the breaſt, eſpecially the firſt time of ſuckling, the nipple will be formed, and the milk be gradually brought on. Hence much pain, and its conſequences, will be prevented, as well as the frequency of ſore nipples,‡ which in a firſt lying-in, have

* This ſubject is largely and elegantly treated by Dr. GREGORY, in his *Comparative View*, before quoted.

† Mr. Moss.

‡ It may be proper to notice in this place, the colour ſometimes given to an infant's ſtools, from a little blood it has repeatedly ſwallowed, when the nipples of the ſuckling mother have been very ſore; a circumſtance, indeed, that does not often occur, but has been alarm-

have been wont to occaſion no inconſiderable trouble. But ſhould this, or even an abſceſs take place, they are both far leſs diſtreſſing under proper management than has been uſually imagined.* However, ſhould the mother be unable to ſuckle, and a wet-nurſe be engaged, there can be no harm in putting the child to

alarming for want of the true cauſe being underſtood. The ſtools in this caſe will be of a ſtrange blackiſh colour, ſuch as have been noticed under the head of fever, and very ſimilar to the firſt ſtools of new-born infants.

* See a Treatiſe upon Ulcers before mentioned, in which the *milk-abſceſs*, and *ſore nipples* are fully conſidered, and a ſucceſsful, and eaſy method of treatment pointed out.

From motives of benevolence, I beg leave to mention here a new contrivance, which has ſucceeded ſo far beyond every former device, for defending the nipples, and enabling women to nouriſh their own children, that I cannot but wiſh to extend its advantages, by this public recommendation of the *Nipple-Shield*. It may be had of the ingenious contriver, Mrs. RELF, No. 12, *Bell's-Buildings, Saliſbury-Square, Fleet-Street*; or for families at a diſtance from *London*, by application to Mr. SAVIGNY, Surgeons Inſtrument-maker, in *King-Street, Covent-Garden*.

the

the breaſt, after it has taken a doſe or two of the opening medicine; or ſhould it be brought up by hand, and not eaſily kept quiet, a ſpoonful or two of water-gruel, ſweetened with a little Liſbon-ſugar or honey, may be given for this purpoſe, which will uſually ſet it aſleep; after which it will be ready for whatever culinary food ſhall be thought proper for it.

AND on this article, a vaſt croud of abſurdities open upon us at once; and many of them with the ſanction of cuſtom and authority. I ſhall firſt advert to the thickneſs of the food: and it has, indeed, been matter of wonder, how the cuſtom of ſtuffing new-born infants with bread could become ſo univerſal, or the idea firſt enter the mind of a parent, that ſuch heavy food could be fit for its nouriſhment. It would be well, that all who are intruſted with the management of children ſhould have more juſt ideas of the manner in which we are nouriſhed; and eſpecially, that it is not from the great quantity,

nor

nor from the quality of the food, abſtractedly conſidered. They may ſurely be led to conceive, that our nouriſhment ariſes from the uſe the ſtomach makes of the food it receives, which is to paſs through ſuch a change in digeſtion as renders it balſamic, and fit to renew the maſs of blood, which is daily waſted and conſumed. An improper kind, or too great a quantity taken at a time, or too haſtily, before the ſtomach has duly diſpoſed of its former contents, prevents this work of digeſtion, and by making bad juices, weakens inſtead of ſtrengthens the habit; and in the end produces Worms, Convulſions, Rickets, Scrofula, Slow Fevers, Purging and a fatal Maraſmus.

NATURE, it ſhould be conſidered, has provided only milk, for every animal adapted to draw it from the breaſt; and that of women is certainly amongſt the thineſt of them, but at the ſame time, far more nutritive than bread, and, probably, than any other milk, as it contains a greater proportion of ſaccharine

matter; * which is thought to be that quality in all our food which renders it nutricious. It is true, bread, as it requires more digeſtion, will lie longer on the ſtomach both of infants and adults; and hence, probably, becauſe it ſatisfies the preſent cravings, it has been conceived to afford a greater proportion of nouriſhment, though mixed up only with water, as it too frequently is, it is far leſs nutritive than has been imagined. Children ought to be frequently hungry, and as often ſupplied with light food, of which milk is really the moſt nouriſhing that we are acquainted with. This could never be doubted, but from its paſſing ſo quickly out of the ſtomach; on which account, indeed, though not the propereſt food for adults, employed at hard labour, and many hours from home, it is the fitteſt of all

* The ſugar, or ſalt, of human-milk is one third more in quantity, and its extract, or ſolid contents, is double as much as in cows. See the *Table* at the end of the *Introduction*.

for

for the ſedentary life of a tender infant, who cannot get that nouriſhment from bread or other ſolid food, of which the ſtomach of the adult is capable. It muſt have been for want of attending to this conſideration, that Dr. ARMSTRONG has ſaid ſo much in favour of bread and other thick victuals: which, by the bye, he began to make uſe of for his own children (from its ſucceſs in whom he has ventured to recommend it,) at the age of ſix or ſeven months; a matter very different from ſtuffing an infant with it almoſt as ſoon as it is born. For every thing the ſtomach cannot digeſt, it has been ſaid, may be juſtly conſidered as a poiſon, which if not puked up, or very ſoon voided by ſtool, may occaſion ſickneſs, gripes, what are called inward-fits, and all the train of bowel complaints, which may terminate in one or other of the evils juſt mentioned. And this I ſee almoſt daily exemplified; new-born infants after being ſo fed, and ſeemingly thriving

for a ſhort time, ſuddenly falling into a purging, or being carried off by fits.

MILK itſelf, (like all the other animal juices) is produced from food taken in by the mother; and is the richeſt part of it. It is in her ſtomach that the aliment is digeſted, which by a combination of powers in the chylopoëtic viſcera, is ſo far animalized as to be converted into a kind of white blood; from whence it has been obſerved, every animal body is daily recruited. Hence it is very apparent, that previous to an infant having acquired ſtrength enough to convert ſolid food into this wholeſome chyle, the parent, by this wiſe ſubſtitution in nature, has, in a great meaſure, previouſly, accompliſhed this work for the infant ſhe is to nouriſh. During infancy, therefore, both nature and reaſon moſt clearly point out the expediency of a milk diet;* but how long it

* Whether the parent be able to ſuckle her own child, or that office be performed by a hired-nurſe, is not here particularly conſidered. The deſign is only to

it ought to be perſevered in, or infants wholly confined to it, is not eaſily aſcertained, and will be further conſidered in its place, with a latitude that the queſtion demands. There is a period in life, indeed, to which this nutriment is more particularly adapted, both experience and theory demonſtrating it to be more ſuitable to young people than adults, as ARBUTHNOT has remarked; and it has been obſerved, that it does not appear, that the ſtomach of the cow will produce the ſame change upon milk, as that of the calf does, which is, therefore, conſtantly made uſe of in dairies, for ſeparating the curd from the whey.

It can ſcarcely be improper before I entirely quit the article of ſuckling, to relate a recent inſtance, and a remarkable

to prove that milk is in general the moſt proper food for an infant. Whether that, indeed, be prepared by its own mother, a nurſe, or by ſuch animals as the cow, or the aſs, is equally to the purpoſe: where the former cannot be had, the beſt, and moſt natural ſubſtitute, ſhould be provided.

one out of many, as a proof of the degree to which infants may pine for the breaſt, even to the great hazard of periſhing for the want of it, where the real cauſe of the diſeaſe is not ſuſpected. This little hiſtory will likewiſe further ſerve to illuſtrate the preference of human-milk which has been ſo ſtrongly inſiſted upon.

THE little infant alluded to was very healthy when it was three months old, and was then weaned on account of the illneſs of the wet-nurſe; but ſoon afterwards ceaſed to thrive, and had continual bowel complaints. At the age of nine months I was deſired to viſit it, and was informed that it ſlept very little, was almoſt inceſſantly crying, and had for many days brought up nearly all its food; was become very rickety, and had all the appearance of an infant almoſt ſtarved. Trial had been made of every kind of food, except the breaſt, and the child been many weeks under the care of an experienced apothecary; was conſtantly in a ſtate of purging,

purging, and ſeemed to have been juſt kept alive by art.

On the firſt ſight of the child, and upon the face of this account, it was very evident, that this infant was not nouriſhed by the food it received, and that the complaint lay wholly in the firſt-paſſages. But reduced as it was, I had little expectation from medicines; and therefore gave as my opinion that either the child ſtill pined for the breaſt, in which caſe, I doubted not, it would take it, though it had now been weaned ſix months; or, that it ought to be carried immediately into the country, and be ſupported for ſome time only upon aſſes milk, or perhaps be fed, now and then, with a little good broth.

My advice being taken, a good breaſt was procured, which the infant ſeized the moment it was put to it, and after ſucking ſufficiently, ſoon fell aſleep for ſeveral hours; waked without ſcreaming, and took the breaſt again. It is ſufficient to add, that the child ceaſed to puke or be purged, and recovered from that hour;

and after ſucking eight or nine months longer, became in the end a fine healthy child.

Although this inſtance has ſomething extraordinary in it in reſpect to the length of time the child had been taken from the breaſt; and though infants are generally completely weaned in ſix or ſeven days at the furtheſt; it is yet no uncommon thing for children, when ill, to take to it again, after ſeeming to be thoroughly weaned for three or four weeks. And this circumſtance is the more worthy of notice, as it ſometimes is a very fortunate one; and ſhould lead to making the trial whenever infants newly weaned may be ſeized with any complaint, under which a return to the breaſt may be uſeful. Such, particularly, is the hooping-cough; under which I have known a child of more than a year old, and apparently thoroughly weaned for a month, take to the breaſt of a ſtranger very cheerfully, in the preſence of its former nurſe, with the precaution only of leading it to make the firſt attempts

tempts during the night. Such children for the few firſt days turn away from the new wet-nurſe to their former one, as ſoon as they have ſatisfied themſelves at the breaſt, and go back to the nurſe again very readily whenever they find an inclination to ſuck.

To return; I am free then to lay it down as an axiom, that milk ought to be the chief part of the diet of infants for a certain time, whether it be breaſt-milk or any other; and that it will prove ſufficiently nouriſhing for nineteen out of twenty, I might perhaps ſay ninety-nine out of a hundred: exceptions, I believe, there may be, but much fewer children would periſh if no exception were to be made, than by abſurdly ruſhing into the contrary extreme. But ſuppoſing a very ſtrong child, at the end of the month, really not ſatisfied with milk only, and always craving the moment it has been thus fed, it, doubtleſs, may have a little boiled bread added to it, two or three times in the day; but I ſhould be very cautious

cautious of extending it further.* In the caſe, however, of an infant at the *breaſt*, if it be always craving as ſoon as it is taken from it, the occaſion of its craving will generally be found to be in the nurſe's milk; previouſly therefore to allowing a more ſolid food, the quality of the milk, as well as the ſtate of the nurſe's health ſhould be inquired into, and the milk be changed if its goodneſs be ſuſpected. Perhaps where bread and milk is allowed, whether at a very early or a later period, it would be an advantage to boil a piece of roll, together with the upper cruſt, in a good deal of water, till it is very ſoft, by which means the bread

* "In *Italy*, *Holland*, *Turkey*, and through the whole "*Levant*, children are rarely allowed any other food "than the breaſt-milk, during the firſt year:" (BUFFON) and the Savages in *Canada* ſuckle for four or five, and often ſix or ſeven years.—In ſome extreme northern climates (as hath been already remarked) we know they can have no other food, for a long time, and yet, there, the death of an infant is as rare an event as that of a ſuckling mother.

will

will part with ſome of its aceſcent quality; the water ſhould then be ſtrained off, and the bread mixed up with the milk, which ought to be boiled if the child is very young, or inclined to a purging.

It would, I perceive, lead me beyond all bounds to enter further into this matter; I ſhall therefore only add, that infants certainly ought not to be fed lying on their backs, but ſitting upright; as they will in this poſition ſwallow their food more eaſily, as well as more readily perceive when they have had enough. So alſo children nouriſhed at the breaſt, ought to be withdrawn from it for a ſhort time, eſpecially juſt after waking from a long ſleep; whereby, beſides other advantages, much undue labour to the ſtomach may be prevented, as well as enabling it to retain what it has received; a part of which very frequently is otherwiſe thrown up.

IF Milk be the proper food for infants brought up by hand, the next inquiry will naturally be, what milk is the beſt? and what

what is the fitteſt inſtrument for feeding with? And it is from long experience, as well as from reaſon and analogy, that I venture again to recommend the ingenious contrivance of the late Dr. HUGH SMITH, ſet forth ſome years ago in a treatiſe on the Management of Children, in a ſeries of letters addreſſed to married-women. The milk he likewiſe adviſes, is cows milk in preference to all others, as being the moſt nouriſhing, and therefore, in general, the moſt proper; and I wiſh to refer the inquiſitive reader to ſuch other reaſons as the Doctor has given, to which I can add nothing but my own experience of their validity. To the milk ſhould be added a little thin gruel, or barley-water, which forms a very ſmooth and pleaſant nouriſhment. A few weeks after birth, (and I think in general the ſooner the better) inſtead of the barley-water or gruel, there ſhould be mixed with the milk a ſmall quantity of a light jelly made from harts-horn ſhavings, boiled in water to the conſiſtence that veal broth

acquires

acquires when it has ſtood to be cold.* The deſign of the jelly is obvious and rational, at once calculated to render the food more nutritive, as well as to correct, in ſome meaſure, the aceſcency of the milk; this quality being thought to abound in the milk of different animals, in proportion to the quantity of vegetables on which they feed.† And the milk of quadrupeds, we know, is produced from vegetable juices only, whilſt breaſt-milk is formed by a mixture of animal and vegetable food. A little Liſbon-ſugar may be added to this compound of jelly and milk, if the child be not inclined to a purging, or in that caſe a little loaf

* There is ſometimes a difficulty in making this jelly, on account of the harts-horn being bad; thoſe who ſhave it, often mixing with it the ſhavings of trotters, which may, however, be diſtinguiſhed by their brittleneſs. If the ſhavings are good, two ounces of them boiled very ſlowly in a quart of water to a pint, will make the jelly of a proper conſiſtence.

† See Dr. YOUNG, *De Natura et Uſu Lactis, in diverſis Animalibus.*

ſugar;

ſugar; but the leſs of either the better. It will be proper to have the milk and jelly warmed ſeparately, and no more at a time than may be wanted; when it ſhould be put into the ſmall pot Dr. SMITH has contrived for the purpoſe, which muſt be very carefully cleanſed and ſcalded, at leaſt once every day, and the ſpout be thoroughly rinſed, leſt any ſour curds ſhould ſtick about it; and to this end, it may be convenient to be provided with two.* At firſt the milk ought to be

* The objection to this mode of feeding, made by a writer at *Dover*, that the pot may often be left foul, and therefore the food become four, appears to me to be very far fetched; ſince if nurſes are not to be depended upon in matters of cleanlineſs, and the ſweetneſs of the food they are to adminiſter, we can truſt them in nothing, and infants muſt be continually ſuffering; there being a hundred particulars eſſential to children's health, in which ſervants cannot be always ſuperintended, but muſt be entirely confided in.

Having been often ſent to for a direction to the ſhops where the infant feeding-pot may be met with, I notice in this place that it is always kept at Mr. *Philips's* in Oxford-ſtreet, near Cavendiſh-ſquare; *Storer's* in Piccadilly, near to Park-lane, and at *Neale's Staffordſhire warehouſe* in St. Paul's Church-yard.

boiled,

boiled, to render it leſs opening, but when the child is ſeveral months old, or may chance to be coſtive, the milk need only be warmed. If it be freſh from the cow, and very rich, a portion of water may be added to it, whilſt the infant is very young. Indeed, it ought to be as new as poſſible, ſince milk, as an animal juice, probably contains ſome fine ſubtile particles, which evaporate upon its being long out of the body.

Though I have ſaid cows milk is uſually preferable to any other, it will be conceived, that I mean for infants who are ſtrong and healthy. Aſſes milk, on the other hand, being more ſuitable for many tender infants during the firſt three or four weeks, or perhaps for a longer time, as well as for children who are much purged; as it is thinner and having far leſs curd than any other milk, it ſits much lighter on the ſtomach, both of tender infants and adults. And, perhaps, it may be inferred, from the very different proportion of cream, and of cheeſy principles,

ciples, that the milks of different animals contain, that providence has rather conſidered the benefit of man than of the young of various quadrupeds; though, doubtleſs, the milk is likewiſe properly adapted to them.

In regard to the mode of feeding infants, I can ſay from experience, that for the delicate and tender at leaſt, the boat, the ſpoon, and the horn, are in no wiſe comparable to the pot; which is ſo contrived, not only as to pleaſe the child by its reſemblance to the nipple, and the milk coming ſlowly into its mouth, but alſo to afford the infant ſome little degree of labour, in order to acquire the quantity it needs, (which the horn does not;) by which means the food is alſo duly mixed with ſaliva. The like little fatigue takes place in children nouriſhed at the breaſt, and by this mean it is, that infants, eſpecially when very young, are not ſo apt to overſuck, as they are to be over-fed by the boat or the ſpoon, the food of which being ſweet and pleaſant, and requiring only

only the trouble, or rather the pleaſure of ſwallowing, the child is tempted to take too much at a time; whilſt the nurſe often forces down a ſecond or third boat-full, in order to put a ſtop to the cries, which indigeſtion from the former may have occaſioned.

THE writer juſt now alluded to, as well as Mr. LE FEBURE DE VILLEBRUNE detracts from the advantages of this mode of feeding, by obſerving, that infants may be fed as ſlowly and cautiouſly by the ſpoon: but the fact is, that this is, indeed, one of the things in which ſervants *cannot* be depended upon, whilſt there are ſuch temptations to the contrary, (at leaſt I have not met with many who could;*)

* Amongſt the exceptions I have met with, I was lately greatly pleaſed with a nurſe, who ſaid, "I always let my children *aſk* for their food;" which ſhe pertinently explained by ſaying, I do not feed infants becauſe they cry; but if, after faſting a reaſonable time, they begin to moan, I endeavour to amuſe them till they anxiouſly hunt about them, and repeatedly form their lips in a certain way, that aſſures me it is a want of food only that makes them complain.

nor will children, indeed, oftentimes endure ſlow feeding, if they can anywiſe prevent it, but will be ſcreaming all the while, inſtead of being kept quiet by their food: though the hope of quieting them, it has been obſerved, is frequently the nurſe's ſole motive for giving it. But when an infant *can* get it only ſlowly from the pot, and yet is itſelf all the while employed in the buſineſs, it will be agreeably diverted while it is acquiring its nouriſhment, in the ſame manner that it is amuſed at the breaſt.

The pot is formed in the ſhape of an Argyle, or gravy-pot, with a long ſpout, riſing from the bottom, and pierced only with a few ſmall holes at the end, which is to be covered with a piece of vellum, waſhing-leather, or parchment; which being left looſe a little way over the ſpout, is ſoft and pleaſant to the infant's mouth, and it has been ſaid, is nearly as acceptable to many children as the breaſt, as I have often been a witneſs.

This

This manner of feeding is not only pleaſant to the child but very convenient to the nurſe, and the food equally at hand in the night as the day, being eaſily kept warm by a lamp, or even in the bed. The only objection I have ever known made to it by thoſe who have made trial of it, is that which I eſteem one of its higheſt recommendations, which is, that children thus fed are frequently hungry, that is, they are what nature deſigned them to be; this food ſitting light on the ſtomach, and being eaſily digeſted, like the breaſt-milk, children often need a ſupply of it.

I SHALL juſt mention another popular objection to the plan here recommended. This is taken from ſome fine children we meet with, who have been brought up by hand from the birth, and fed with thick bread victuals all the day long, whilſt we every now and then ſee ſome of thoſe who have been debarred that ſort of diet, weak and tender till they become a year or two old. Not to ſtop here to obſerve, that this objection militates equally againſt children

living on the breaſt, though that is the food nature has deſigned for them, it will be ſufficient to ſay, that it is only ſtrong children who may be bred up almoſt anywiſe, that can at all digeſt thick victuals; that there are others who cannot endure the leaſt thickening in their food, nor any kind of bread; and that weakly infants, who are ſcarcely preſerved by the moſt careful attention to their food, would ſoon be hurried out of the world if that attention were withheld. And this reminds me of an obſervation of a very judicious friend in the north of England, which greatly ſurpriſed me at the time, as I had never met with any obſervation from him before, the propriety of which was not exceedingly obvious and convincing. Upon ſeeing a number of fine children one day in *London*, he with ſome ſhrewdneſs obſerved, that we did not ſeem to have ſo many weakly half-ſtarved children as he met with in the country, and that he had often before made the like obſervation in his journies to town. It appeared to me

that

that my friend muſt lie under ſome miſtake, and I accordingly mentioned my ſurpriſe at ſuch a remark coming from him; when he removed my aſtoniſhment by inſiſting on the fact, with the following obvious ſolution of it. I apprehend, ſays he, there are ſcarcely any but fine and ſtrong children in *London*, who live to be two or three years old, the weaker ones, for want of good air, and exerciſe, ſinking under their infirmities; whilſt the tendereſt children in the country by being turned out to crawl in the wholeſome open air, or by ſitting at the door almoſt all the day, eſcape the fatality of your groſs air and warm nurſeries, and ſurvive the trying periods of infancy, though ſome of them remain weak and rickety till they become old enough to endure ſevere exerciſe, which can alone ſtrengthen them effectually.

I HAVE no doubt of there being certain exceptions to the mode of feeding I have recommended, that are worthy of more attention, although very few have actually

come to my knowledge, and though I am perſuaded, that as a *general* plan, it is both a natural and ſalutary one. Inſtances may be met with, however, of ſome very athletic children who may require a more nouriſhing, and perhaps ſomewhat more ſolid diet; and the ſtate of bowels in others, will call for a greater variety of food, and of a kind not calculated to be adminiſtered in the mode here recommended, as hath been already noticed under the head of purging. On theſe accounts, I would offer another obſervation or two in regard to the thicker kind of victuals; and firſt, that in families accuſtomed to bring up their children by the ſpoon, I think I have found a greater number of infants well nouriſhed by the French, or the Uxbridge-roll boiled in water to a jelly, and afterwards diluted with milk, than on any other kind of pap. From ſuch families I have likewiſe learned, that ſome *change* in the food is, however, frequently neceſſary, and will be indicated by the degree of

reliſh

reliſh which the infant may diſcover towards different kinds of food, as well as by their effects on the bowels; though the child be not ſuppoſed to be at ſuch times really unwell. Such changes principally reſpect the *different kinds* of bread, or other farinaceous ſubſtance uſually mixed with milk, and ſometimes the ſubſtitution of broth, for a few days, in the place of the latter.

WHEN children brought up by hand become four or five months old, eſpecially if ſtrong and healthy, they may, doubtleſs, be allowed a thicker kind of victuals, becauſe their digeſtive powers being by this time become ſtronger, they are able to extract good nouriſhment from it; though this change is not equally neceſſary for children brought up at the breaſt, at leaſt, ſuch do not require it ſo early; breaſt-milk being more nouriſhing than any other. The firſt addition of this kind, however, whenever it becomes neceſſary, I am perſuaded, ought to be beef-tea or

broth,* which with a little bread beat up in it in the form of panada, will be at once an agreeable and wholeſome change, and prepare them for further advances in this way. But as this cannot well be given oftener than two or three times a day, a little bread and milk may alſo be allowed them every morning and evening, as their ſtrength and circumſtances may require. A cruſt of bread likewiſe, as ſoon as the child has a couple of teeth, will amuſe and nouriſh it, whilſt it will aſſiſt the cutting of the reſt, as well as carry down a certain quantity of the ſaliva; a ſecretion too precious to be loſt, when the digeſtive powers are to be further employed. As the child grows older, to broth may be added light puddings, made of bread,

* "I cannot help remarking here, that the gravy "of beef or mutton, not over roaſted, and without "fat, properly diluted with water, is the wholeſomeſt "and moſt natural, as well as nouriſhing broth that can "be made." Dr. HUGH SMITH.

ſemolina,

ſemolina, tapioca,* or rice; ſalep boiled in milk, and ſuch like. But to feed a child with veal, chicken, or other animal food, before nature hath given it teeth enough to chew it; howſoever ſmall it may be minced in the kitchen; is altogether as unnatural,† and can prove nouriſhing only to ſuch children, as from the great ſtrength of their natural conſtitution, need leaſt of all the aſſiſtance of art. It is by degrees only, that children ought

* The beſt *tapioca*, I believe, comes from the *French Weſt-India Iſlands*, and is called by the general term, *farine*. It is in very common uſe alſo in our *Weſt-India Iſlands*, where it is made into thin cakes, and is called *caſſada*:‡ in this form, therefore, it is moſt likely to be genuine, and may be preſerved for a very long time.—Two ounces of *tapioca* ſhould be boiled ſlowly in three pints of water, to a quart, and be then paſſed through a ſieve: a little milk being added, or not, as circumſtances may direct.

† Ante dentium eruptionem non conveniunt cibi ſolidiores. Ideo natura quæ nihil fruſtrà facit, & non deficit in neceſſariis, dentes ipſis denegavit, ſed lac conceſſit, quod maſticatione non eget. PRIMROS.

‡ The *Satropha Manihot* of LINNÆUS.

to

to be brought to ſuch food; which at a certain period, indeed, is as neceſſary as a light diet at an earlier age. For it is certain, that the error of ſome parents runs the contrary way, and their children are kept too long upon a fluid, or too ſlender diet; whence their bellies and joints become enlarged, and the bones of the lower extremities too weak to ſupport them, at an age when they want more exerciſe than their nurſes can give them. For when they go alone, not only is a little light meat and certain vegetables to be allowed them once a day, or alternately, with broths, puddings, or blamange, white-pot, cuſtards, and ſuch like kitchen preparations of milk,* but even a little red wine is beneficial to many conſtitutions. This will not only promote digeſtion, and obviate in great meaſure a diſpoſition to worms, but by ſtrengthening the habit, will alſo render children

* "Infancy and childhood demand thin, copious, nouriſhing aliment." ARBUTHNOT, *On Aliments.*

leſs

leſs liable to become rickety, at the very period they are very much diſpoſed to it. Such a plan is the rather inſiſted upon, becauſe ſome parents the moſt deſirous of doing right, fall into a like miſtake even in regard to older children, whom they keep too low, allowing animal food only every other day to thoſe of four or five years of age; which, unleſs in very particular habits, is ſurely an error, at leaſt in this damp climate; and diſpoſes to ſcrofula. But ſo many little infants, on the other hand, fall a ſacrifice to the uſe of indigeſtible food under the age of ſix months, being carried off by vomiting, purging, or fits, that whoever would preſerve them over the moſt dangerous period of infancy, cannot too cautiouſly attend to their diet at this time.*

IT

* From a note in Dr. SMITH's letters it appears, that the average of births annually, within the bills of mortality, for ten ſucceſſive years, was 16,283; out of which were buried under *five* years of age 10,145, and from amongſt theſe 7,987 were under *two* years. So that

IT is a common direction in works of this kind, to point out the propereſt times for feeding an infant brought up by hand, and to direct how often it may ſafely be fed. I ſhall juſt obſerve therefore, that no adequate rules, can be laid down on the occaſion, and on that account none ought to be attempted, ſince none can

that almoſt *two thirds* of the children born in *London* and its *environs*, become loſt to ſociety, and more than *three fourths* of theſe die under *two years of age*.—This proves how hazardous a period that of infancy is, in this country; and I am ſorry there is ſo much reaſon to be perſuaded, that the want of air, exerciſe, and a proper diet, has added, unneceſſarily, to its dangers; there being no ſuch mortality in barbarous nations, whoſe inhabitants live in a ſtate of nature, nor in any part of the known world, amongſt other young animals.—Although theſe, and other calculations I have ſeen, ſhould be found ever ſo accurate, it is a pleaſant reflection, (to whatſoever the circumſtance may be owing) that ſince the time they were taken, the proportion of deaths at the early period above alluded to, has been very conſiderably decreaſing; and the writer has noticed, that for ſome years the average of deaths, according to theſe bills, has not been more than *ſix* in *ſixteen*; which is but little more than *one third*.

be

be ſufficiently comprehenſive; and I am happy in not being at all at a loſs in this inſtance wherein writers have differed ſo widely. For infants not uſually taking too much at a time in the manner of feeding that has been recommended, on account of the little fatigue which, it was obſerved, they undergo in acquiring their nouriſhment, may generally be permitted to partake of it as often as they might of the breaſt.* This is, however, by no means the caſe, when children are allowed to eat thick victuals, and are fed by the ſpoon, by which, it has been ſaid, they are always in danger of taking too much; an evil that cannot be too often pointed out.

BEFORE I cloſe this head of the management of children, perhaps the moſt important of all, I ſhall point out the moſt ſuitable diet under the different complaints to which they are moſt liable. And after the hints that have been thrown out

* Optimum vero medicamentum eſt opportunè cibus datus. CELSUS. *De Med.*

through

through the former part of this work, I need only obſerve, that as light a diet as is poſſible is uſually called for when a child is unwell, let the diſorder be almoſt whatever it may. If a fever ſhould accompany it, the child will require ſtill leſs food than in any other complaint, but plenty of drinks; which may alſo be ſo calculated as to furniſh nearly as much nouriſhment as the infant will require, and may in ſummer-time be given cold. Such are barley-water, water in which a cruſt of bread has been boiled, and thin tapioca; or if a purging attends, rice-water, and a drink made of harts-horn ſhavings, with a little baked flour in it. In this complaint, wherein more nouriſhment is required to ſupport the child than under moſt others, (if not attended with fever,) baked flour mixed up with boiled milk, (as mentioned under the article of purging) is admirably calculated both as a proper diet and medicine; and if kept in a dry place, may be preſerved fit for uſe for a conſiderable time. For the like complaint,

plaint, arrow-root, or the food directed by Dr. SMITH is very well adapted, and will afford a little variety. He orders a table-ſpoonful of ground rice to be boiled with a little cinnamon, in half a pint of water, till the water is nearly conſumed; a pint of milk is then to be added to it, and the whole to ſimmer for five minutes: it is afterwards to be ſtrained through a lawn ſieve, and made palatable with a little ſugar. In this way, or joined with baked flour, as mentioned above, milk may generally be made to agree perfectly well, even when the bowels are purged; and when it does ſo, proves exceedingly nouriſhing. Should it chance to diſagree, owing to the great acidity of the firſt-paſſages, good beef-broth ought to be made trial of, which may be thickened with baked flour, inſtead of bread, and makes a very pleaſant, as well as anti-aceſcent diet. Likewiſe the patent ſago, properly boiled, adding to every half-pint a large tea-ſpoonful of red Port wine, for the uſe of infants of a week old; cautiouſly

cautiouſly increaſing the quantity of wine, as they grow older. A large family of children whoſe bowels had been continually diſordered by various other food, has been brought up by this, which was perſevered in till they had four, or more teeth, and were able to partake of pudding and other common food.

PERHAPS much more has been ſaid on the ſubject of acidity, by ſome writers, than really ought to have been, or it may at leaſt be ſuſpected, that a proper attention has not been paid to the peculiar circumſtances of infants, who are all much diſpoſed to it. Acidity when injurious, is, probably, oftentimes rather an effect, than the firſt cauſe of the diſorders of infants. It ſeems, indeed, to be natural to them, ariſing alike from the weakneſs of their organs of digeſtion, and the nature of their food; though there is no doubt, that their complaints are afterwards aggravated by an abounding acid, or rather, probably, from this natural acid becoming morbidly acrid, through over-feeding,

and

and other errors in their diet, or from its being accidentally confined in the firſt-paſſages. Nature, however, ſeems to have deſigned the food of infants to be aceſcent, and till the body be diſordered, and digeſtion hurt from one cauſe or other,* this quality of their food is not likely to be very injurious to them, and, probably, far leſs ſo than food of a very alcaline nature would be, with a like weak digeſtion. It is true, indeed, that as many ſimilar complaints in adults, who feed on different diets, will, cæteris paribus, have their varieties, and each have ſome relation to the different qualities of their food; ſo it is not to be wondered at, that the complaints of infants ſhould be attended with wind and other marks of acidity, which in adults are uſually the leaſt hurtful of all; and are, indeed, for

* Such cauſe, it has been obſerved, may be an over quantity, or too ſweet a food, or heavy and indigeſtible diet; which, indeed, prove more frequent occaſions of a diſtempered acidity, than any thing elſe.

the moſt part, pretty eaſily corrected in children, while that is the only complaint. When they are much troubled with wind therefore, it cannot be wrong to mix ſome carminative ſeeds, or the waters diſtilled from them, now and then, with their food, ſuch as ſweet fennel, or cardamom ſeeds, bruiſed very fine; but the aq. anæthi is that I have generally recommended, and being a liquid, is always ready to be added to the food, without loſs of time. But though ſuch an occaſional addition to their food is often exceedingly uſeful, I cannot help ſpeaking againſt its being made a conſtant practice, by which children not only ſuffer when by accident, or abſence from home, it has been neglected, but it deſtroys the very end for which it was uſed, by the ſtomach becoming accuſtomed to it.

Children, however, become leſs ſubject to wind and hurtful acidities as they grow older, and the ſtomach gets ſtronger, as it is called. But ſhould theſe complaints, notwithſtanding, continue obſti-

nate,

nate, a little fine powder of chamomile flowers, or a few drops of tinctura columbæ, mixed in water, and warmed with a little ginger, will prove exceedingly bracing to the ſtomach and bowels, and render them leſs diſpoſed to acidity. Exerciſe alſo according to the age and ſtrength, is a grand preſervative and remedy, and eſpecially making infants break wind after ſucking or feeding. And this may generally be effected, as every one knows, by raiſing the infant up, and gently tapping it on the back, or rubbing its ſtomach, before it be laid in the cradle to ſleep.

I ſhall only add further, that when milk is frequently thrown up curdled, a little prepared oyſter-ſhell powder may be added to it, or a very ſmall quantity of almond-ſoap, or of common ſalt, which will not at all injure the flavour, and will prevent this change happening too ſoon in the ſtomach.

I SHALL now close this head, with some observations relating to Wet-nurses, and to Weaning.

The first and essential point in a wet-nurse is, doubtless, that her milk be good; to which end it is necessary she be healthy and young, not of weak nerves, nor disposed to menstruate whilst she gives suck, and that her bowels be rather costive than otherwise. Her nipples should be small, but not short, and the breast prominent, and rather oblong than large; such distention being rather from fat, than from milk. The chief marks of good milk, are its being thin, of a bluish colour, rather sweet, and in great quantity; and if under six months old, it is, doubtless, an advantage. And this is of more consequence, than it seems of late years to be thought; for after this time it generally becomes too thick for a new-born infant, and is not easily digested. On this account, though an infant may not be really ill, I have frequently observed it

not

not to thrive, though it take great plenty of ſuch milk.—A wet-nurſe ought to have good teeth, at leaſt, her gums ſhould be ſound, and of a florid colour. She muſt be perfectly ſober, and rather averſe from ſtrong liquors; which young and healthy people ſeldom need in order to their having plenty of milk. She ſhould be cleanly in her perſon, good-tempered, careful, fond of children, and watchful in the night, or at leaſt, not liable to ſuffer in her health from being robbed of her ſleep.

THE diet proper for wet-nurſes is likewiſe worthy of notice. And here, an invariable attention ſhould be paid to natural conſtitution and habit. Due allowance being made for theſe, it may be ſaid, that milk, broth, and plain white ſoups; plain puddings, fleſh meats of eaſy digeſtion, and a due mixture of vegetables; with plenty of diluting drinks, and ſuch proportion of more generous liquors, (ſpirits excepted) as the variety of circumſtances ſhall direct, will be a proper diet for ſuckling women. Reſpecting ve-

getables particularly, the ſtricteſt regard ſhould be had to conſtitution and habit. Wherever vegetables, or even acids, uniformly agree with the ſuckling parent or nurſe, I believe healthy children will rarely ſuffer by her partaking of them; but on the contrary, the milk being thereby rendered thin and cooling, will prove more nouriſhing and ſalutary, in conſequence of being eaſier of digeſtion. To theſe regulations ſhould be added an attention to exerciſe, and frequent walks in the open air: to theſe, hired wet-nurſes have been previouſly accuſtomed, and are therefore ſure to ſuffer by confinement to warm rooms, equally to the injury of their own health, and of the infants they ſuckle.

I COME now to the article of weaning of children; the proper age for which will depend greatly upon attending circumſtances. A child ought to be in good health, eſpecially in regard to its bowels; and, doubtleſs, ought firſt to have cut, at leaſt, four of its teeth. This ſeldom takes place till it is near a twelvemonth old;

old; and it may be obſerved, that healthy women who ſuckle their own children, and take proper exerciſe, do not uſually become pregnant again in leſs time. We ſhall not be very wide, therefore, of the order of nature, if we ſay that children in general ought not to be weaned much earlier than this; making proper allowances, however, for all juſt exceptions to general rules,* and eſpecially as far as teething may be concerned.—Small and weakly infants, if rather feeble than ill, are oftentimes benefited by being weaned; they ſhould therefore, about this age, be taken from the breaſt, inſtead of being, on account of weakneſs, nouriſhed much longer in that way: a trial of ſuch a change ſhould, at leaſt, in moſt inſtances be made.

ANY preparation for weaning is generally needleſs, and eſpecially that of feeding children before-hand, though made a

* ASTRUC adviſes children to be ſuckled till they are two years old; but without giving any ſufficient reaſons.

common excuſe for ſtuffing them whilſt at the breaſt with indigeſtible food. I have ſeen many mothers needleſsly torturing themſelves with the fear of their children being weaned with difficulty, becauſe they could not get them to feed when eight or ten months old, and ſtill at the breaſt; but I have always found ſuch children wean, and feed juſt as well as others, when once taken wholly from it. I, therefore, never have any fear in that reſpect, and therefore wiſh to counteract, if poſſible, a ſentiment encouraged by ſeveral writers, which has, I believe, no real foundation in fact, but has too often been productive both of much inconvenience and miſchief. But I do not by this intend to ſay, that a child of eight or ten months old would be injured, or oftentimes not benefited, by a little food, once a day, of a more ſolid nature than the breaſt-milk, as, indeed, I have intimated before; but when children happen to be weaned much earlier, and are fed almoſt from the birth merely with that view,

(which

(which is often the caſe) they may be eſſentially injured by it.

It has been remarked, that infants who are indiſpoſed to feed at all while at the breaſt, are nevertheleſs weaned, and feed juſt as well as others, when once taken wholly from it. There is, indeed, in a few children a little difficulty for the firſt two or three days under any circumſtances; but it is remarkable, that the inſtance attended with the greateſt averſion to common food, that I ever witneſſed, was in an infant who had been allowed a little chicken broth once a day for two months before the weaning was entered upon. This child was very healthy, ſlept well, and ſcarcely cried at all upon being taken from the breaſt, and yet would not receive even the food it had been accuſtomed to; ſo that for ſix and thirty hours, it continued averſe from every thing that was offered to it, though it appeared in very good humour. After the ſecond day, however, it took a moderate breakfaſt,

and

and in a little time it fed as readily as other weaned children.

Under ſuch circumſtances, if the infant be in the leaſt degree coſtive, a little magneſia and rhubarb ſhould be adminiſtered, which beſides opening the bowels, will tend to create an appetite. Such infants alſo, where there are more children in the family, ſhould ſit at table with them when taking their meals; as they will thereby, through mere imitation, be diſpoſed to take food.

When the weaning is once entered upon, a great part of their food ought ſtill to be of milk, with puddings, broths, and but little meat; and every kind of food, and even drink ſhould be prohibited in the night, even from the firſt, ſuppoſing them to be weaned at a proper age. The mere giving them drink, even only for a few nights, creates the pain and trouble of two weanings inſtead of one, and if it be continued much longer, it not only breaks the reſt, but the child will acquire a habit

of

of being fond of drinking; the conſequence of which very often is a large belly, weak bowels, general debility, lax joints, and all the ſymptoms of rickets. The child need only be fed the laſt thing before the nurſe goes to bed, which may generally be done without waking it; and whilſt the child ſeems to enjoy this ſleepy meal, it becomes a moſt pleaſant employment to the mother, or nurſe, from obſerving how greedily the child takes its food, and how ſatisfied it will lie for many hours on the ſtrength of this meal;—the mention of which naturally leads to the conſideration of the next Article propoſed, viz.

SLEEP *and* WATCHING.

AFTER what has been already advanced on this article, under the head of their Complaints, only a few obſervations will be neceſſary in this place; and firſt, that healthy children ſleep a great deal for the firſt three

three or four days after they are born, probably from having been previouſly accuſtomed to it. They ought not, however, to be ſuffered to continue this habit in the day time, to the degree ſome children are permitted, but ſhould be gradually broken of it; and indeed if not indulged, they will not be ſo much diſpoſed to ſleep as is generally imagined, and will therefore take more reſt in the night; which is mutually beneficial to the child and the mother, if ſhe be in the ſame room, who eſpecially if ſhe ſuckles, will be leſs diſturbed, at a time when ſhe particularly requires this refreſhment.

Therefore, when infants are ſleepleſs in the night, they ſhould be kept more awake, and have as much exerciſe as poſſible in the day time, which though they be ever ſo young may be pretty conſiderable, (as will be directed more at large in its place,) by playing with them, or dandling on the knee, and otherwiſe amuſing them; and when older, by every kind of exerciſe they can bear. The child, if healthy,

thy, will ſoon contract a habit of being very much awake while it is light, through that lively and reſtleſs ſpirit peculiar to infancy; and by this means, another evil will be very much avoided, that of often laying a child down to ſleep in the day time, for hours together, loaded with a thick dreſs, and covered beſides with heavy clothes in a ſoft cradle, or bed.

But though I am confident theſe cautions will have their uſe, I am equally ſatisfied that many children have much leſs ſleep than they require; but then this deficiency is chiefly in the night, and is often the conſequence of ſome complaints which the child labours under. Upon theſe, however, ſufficient has already been ſaid in the former volumes, to which therefore the reader is referred.

BEFORE I quit this article, it may be remarked, that the cuſtom of conſtantly placing infants on their backs, whether in the cradle or bed, is very improper; for by this means, the ſuperfluous humour ſecreted in the mouth, which, in the time

of

of teething eſpecially, is very conſiderable, cannot be freely diſcharged, and muſt fall down into the ſtomach, where its abundance occaſions various diſorders.* Infants ſhould therefore be frequently laid on their ſides, particularly the right, as favourable to the ſtomach getting eaſily rid of its contents; to which ſide alſo children, when ſtrong enough, will inſtinctively turn, if not prevented by the weight or confinement of their own clothes, or thoſe of the cradle, or bed. The chief apology for all which, is a fear of the infant's falling, or turning on its face; but this is rather an apology for the neglect of that neceſſary attention to children, which whenever it can be commanded, ſhould never be ſpared them.

IT only remains, under this article, to ſay ſomething of the Cradle, which moſt writers have ſpoken againſt. I believe, there is no doubt but the cuſtom of laying children down awake, and rocking

* *See vol.* I, *page* 6.

them

them in a cradle in the day time, or at ſeven or eight o'clock in the evening, when they are to go into their night's ſleep, as it is called, may be an occaſion of making them more wakeful in the night; or at leaſt may cauſe them to expect that kind of motion whenever they awake. But yet I cannot help thinking, there is ſomething ſo truly natural, as well as pleaſant, in the wavy motion of a cradle, (when made made uſe of at proper times) and ſo like what all children are uſed to before they are born; being then ſuſpended and accuſtomed to ride, as it were, or be gently ſwung in a ſoft fluid, upon every motion of the mother, and even during her ſleep, from the effects of reſpiration; that always wiſhing to follow nature as I do, I cannot, on the whole, but give an opinion rather in favour of the cradle. It is, at leaſt, among the *little* things in which we may harmleſsly err, and in which every mother may therefore be ſafely guided by her own opinion, or even by her feelings.

And

And if the child in conſequence of being ſometimes rocked to ſleep in the day time, ſhall expect it when it awakes in the night, it will not be very difficult to find a ſubſtitute for it; and indeed parents ſeem, as it were by inſtinct, to pat and gently move a child, whether lying on the lap or the arm, whenever it appears to awake prematurely. The objections to the cradle made by ſome late writers, militate only againſt the abuſe of it, from any violent rocking; as though infants muſt neceſſarily be jumbled in a cradle like travellers in a mail-coach. For I cannot eaſily perſuade myſelf, that we are in every thing become ſo much wiſer than our fore-fathers; with whom for ſome ages, and in diſtant countries, amongſt rich and poor, the cradle has been judged to be a neceſſary part of family furniture. And in regard to watchfulneſs, as was obſerved in another place, it is uſually a mere ſymptom, and ſhould be treated according to its cauſe; but in a general way it may be ſaid, that nothing can ſo ſafely

and

and effectually contribute to procure natural reſt as that exerciſe to be further conſidered under the next head.

MOTION *and* REST.

IT is chiefly the former of theſe that will claim our attention, as infants ought ſcarcely ever to be in a quieſcent poſture, except when aſleep; and happy for them, that active principle with which nature hath endowed them, is ſo vigorous and overflowing, that they will hardly ſubmit to it. Exerciſe, like air, is indeed of ſo much importance to children, that they cannot poſſibly be truly healthy without it; care only ſhould be taken that it be properly ſuited to their age.

THE firſt kind of exerciſe, it has been ſaid, conſiſts in dandling, as it is called, patting the back after feeding, and gently raiſing the child up and down in the arms; taking care at firſt not to toſs it very high, infants being very early ſuſceptible of fear, and even capable of being thrown into

fits by it. Another exerciſe adapted to this tender age, and of the utmoſt advantage, is rubbing them with the hand. This ſhould be done *all over*, at leaſt twice a day, when they are dreſſed and undreſſed, and eſpecially, as noticed before, along the whole courſe of the ſpine; and ought to be continued for ſome time, being peculiarly agreeable to the child, as it conſtantly teſtifies by ſtretching out its little limbs, and puſhing them againſt the hand, with a ſmile expreſſive of the ſatisfaction it receives from it. Such gentle exerciſe may be partially repeated every time the child's cloths are changed, by rubbing the lower limbs, and every other part within reach. Likewiſe daſhing the face with cold water, in the manner recommended for the rickets,* but more lightly, will produce the effects of exerciſe well adapted to this age.

When children are older, their exerciſe ſhould be proportionally increaſed, and as has been obſerved, they ought never to

* Vol. 1, page 343.

be

be carried in a quieſcent poſture, but the arm that ſupports them ſhould be continually in ſuch motion as the nurſe is able to continue. For children, it has been noticed, delight to be in conſtant motion; and this exuberant activity is given them for the wiſeſt purpoſes, and ought by no means to be counteracted. And I notice the mode of carrying them, becauſe I have ſeen children ſlung careleſsly over the arm in ſuch a manner, as neither affords a child any exerciſe, nor allows it to give any motion to itſelf; which a lively child will always endeavour to do. And, indeed, the manner of carrying an infant is of more importance than is generally imagined, for from it, the child will contract a habit, good or bad, that it will not readily give up, and may be as much diſpoſed to become rickety by improper management in the arms, as if it were lying wet in the cradle; the ill effects of which have been pointed out already.

IT may be a proper inquiry in this place, at what age children ſhould be put on their feet, a point on which people have differed conſiderably; but I apprehend nothing more is required than to follow nature, whoſe progreſs is always gradual, as our imitations of her ſhould be, and we ſhall then ſeldom run very wide of her intentions. If we take notice of a healthy child, it has been ſaid, we ſhall obſerve it to be always in motion, and as ſoon as it gets ſtrength, it will be ſupporting itſelf by the help of its hands and feet, and be crawling about wherever it is permitted. From this exerciſe, it will ſoon acquire an increaſe of ſtrength, and whenever it is upheld by the arms, and diſentangled from the weight of its clothes at the time of dreſſing and undreſſing, it will naturally walk up the waiſt of its mother, or nurſe; and by this manner of moving its limbs, and its bearing more or leſs on the arms, will ſhew what advances it has made. Whenever it is ſtrong enough, it will have attained ſufficient

ficient knowledge to walk by itſelf, and will never attempt it till it is fully equal to the taſk. It will then be perfectly ſafe to permit it to follow its inclination, at leaſt as far as the ſtraitneſs of its limbs is concerned; and I think I may defy any one to produce a ſingle inſtance of a child getting crooked legs, from being ſuffered to walk as ſoon as it has been diſpoſed to make the attempt. But no wiſe ought Nature to be forced; a maxim applicable to every other occaſion; "aware, (as a writer before quoted,* finely obſerves,) that whatever forms may, by artifice, be intruded upon her, and ſhe compelled to aſſume, to enlarge or contract her bias and inclination, ſhe can never be made, eventually, to deviate without manifeſt injury to herſelf, from the ſtation and bounds unalterably impreſſed upon her by the unerring Power, which firſt created and gave her laws."—But the miſchief is, we lead on children prematurely to the trial, by back-ſtrings, and goe-carts, and

* Mr. Moss.

other contrivances, calculated only to ſpare idle nurſery-maids, or what is really pitiable, to allow poor people time to attend to other concerns, who are obliged to work for their bread. But where this is not the caſe, ſuch contrivances are unpardonable, and are the conſequence of ignorance, or idleneſs, which are productive of great evils; and then by way of excuſe it is aſked, at what age a child may be put on its feet—A queſtion, I apprehend, that ought to be replied to only in the manner I have done*—Leave children to themſelves, and they will afford a ſatisfactory anſwer in good time.

It is ſaid, however, by a ſenſible writer,† that children's legs do not become crooked by putting them too early on their feet, and he aſks if any other animal has crooked legs, though they ſtand on

* I have ſeen a child walking alone before it has been nine months old, and at ten months, carrying a heavy play-thing in its hands, whilſt other children, rendered weak and rickety by miſmanagement, have been unable to do half as much at two years of age.

† Dr. HUGH SMITH, *Letters to married-women.*

them

them almoſt as ſoon as they are born. But the caſes, I apprehend, are widely different; quadrupeds and fowls are deſigned by nature to be early on their legs, and it is neceſſary they ſhould be ſo. They are accordingly calculated for it, their bones being ſtrongly oſſified from the birth; but this is, by no means, the caſe with the human ſpecies, and therefore no argument can be founded upon it without conſiderable latitude, and making ſuch allowances for the different circumſtances of children as have been pointed out. But if it be meant only to ſuffer children *to feel their way*, if I may ſo ſpeak, for themſelves, they will never deceive us, nor do I think their limbs ever become crooked, but by urging them to it by contrivances of our own, for which poverty is the only apology that can poſſibly be offered.

A NOTE of Dr. BUCHAN on the ſubject of giving exerciſe to children, which ſome people from their poverty cannot ſpare time to afford them, charmed me

exceedingly. The good ſenſe and philanthropy manifeſted in it, as well as a deſire of extending its uſeful contents, will I hope be apology ſufficient for tranſcribing it, eſpecially as it is at preſent ſo appoſite to my purpoſe. And though I cannot flatter myſelf that Government, however benevolently diſpoſed, will, or perhaps can, at this time, adopt ſuch a plan, either from his recommendation or mine, it is, nevertheleſs, in the power of people of large fortune, both in town and country, to give it very conſiderable influence, eſpecially if the premium were made double for ſuch children as ſhould be produced in good health. The Doctor's words are,

" If it were made the intereſt of the " poor to keep their children alive, we " ſhould loſe very few of them. A ſmall " premium given every year to each poor " family, for every child they have alive " at the year's end, would ſave more in- " fants lives than if the whole revenue of " the crown were expended on hoſpitals

" for

" for that purpoſe. This would make the " poor eſteem fertility a bleſſing, whereas " many of them think it the greateſt " curſe that can befall them ;" and I may add, I have known them expreſs great thankfulneſs, when any of their children have died.

THE advice contained in this chapter is further worthy of ſerious attention from late diſcoveries of a much greater fatality amongſt the children of the poor of this metropolis than I ever ſuſpected.

To aſcertain the fact, an inquiry has been for ſome time ſet on foot, at the *Britiſh lying-in Hoſpital*, at the ſuggeſtion of my colleague, Dr. COMBE. Inquiries have likewiſe been making ever ſince in different ways; and I have no reaſon to ſuſpect that the ſtatement made out from the report of the women offering themſelves at the Hoſpital, is at all beyond the fatality in other poor families in *London*, but, indeed, rather under it, in regard to ſtill poorer people.

THE

THE following is a brief ſtatement of the reſult of the inveſtigation at the hoſpital, during the firſt year:

Several women who had borne

3 Children, had loſt as many as 2
4 - - - - - - - - - 3
5 - - - - - - - - - 4
6 - - - - - - - - - 5
7 - - - - - - - - - 6
8 - - - - - - - - - 7
9 - - - - - - - - - 8
10 - - - - - - - - - 9
11 - - - - - - - 8 and 10
12 - - - - - - - 10 and 11
14 - - - - - - - - - 11 and

ſeveral of the mothers of different numbers had loſt them all.

During another long period, only one woman having borne as many as five children, had reared them all; and one having had twelve, had *eight* living. But ſome having had four, had loſt *three*; and five, had loſt *four*; and ſix, *five*; and ſeven, *ſix*; and eight, *ſix* and *ſeven*; and ten,

ten, *ſeven* and *nine*; and women having borne eleven and twelve, had loſt *eight*, *nine* and *ten*; and fourteen, *eight*: with many who had borne four, five, and ſix, and one twelve, had buried them all.—In addition to this, may be remarked the ſad and rickety ſtate of many of the ſurviving children.

THE above, indeed, contains the moſt formidable view of this matter, but the moſt favourable is, by no means, ſuch as to counter-balance it; there being during a year and a half, no more than three women, I think, who having borne only three children; and one woman, (lately come from the country) with four children, who had loſt none of them. Only one having had as many as ſix, had them all living; and another, who had preſerved eight children out of ten. Amongſt the ſurviving ones, however, it was frequently obſerved, was the laſt born; therefore one leſs likely to be reared than an older child.

From

From theſe different degrees of fatality further contraſted with the ſmall number of deaths in the *hoſpital*, within the month,* we may ſuſpect the different care and attention beſtowed upon young children, as well as the want of certain accommodations; and may fairly argue on their effects.

IT would be unpardonable not to add a few words in this place with a peculiar reference to *females*; upon whom beſide every infirmity common to the other ſex, is impoſed the painful taſk of child-bearing. It is the benefit of the lower claſs of people, indeed, that I have here principally in view; though the caution is not utterly unneceſſary elſewhere.—The many diſtreſſing, and ſometimes fatal labours I have been witneſs to, have led me to regard with a kind of horror a rickety, diſtorted female infant, whoſe parents or nurſe's neglect, or ignorance, is heaping up for it additional ſufferings and dangers,

* See the *Introduction* to this volume.

to

to thoſe which are great enough under every advantage that art, and good health can contribute.

FROM the age of two years therefore, or rather earlier, this care is eſpecially called for; and beſides every caution already pointed out, lays a ſtrict prohibition on girls being ſuffered to ſit, for hours together, on a low ſeat, whereby the pelvis is preſſed between the lower extremities and the ſpine, and is made to grow out of its natural form. The conſequences of this change of figure, if it be anywiſe conſiderable, cannot fail to be productive of increaſed pain and dangers in parturition, frequently equally fatal both to the parent and her offspring.

I am aware, that many poor people are not in circumſtances to give their children all the exerciſe they require; they may, however, ſuffer them to afford as much as poſſible to themſelves, by allowing them to crawl about on the floor, near an open window or door, inſtead of compelling them to lie on their backs, or

to ſit upright, pinned in a chair; the ill-conſequences of which are ſo exceedingly evident.

IT is hoped, no apology may be thought neceſſary for theſe obvious remarks, ſince no pains ſhould be thought too great if they may prevent the evils here pointed out, nor can too much be ſaid to inculcate good nurſing, (and eſpecially exerciſe) which is alone adequate thereto.*

A VERY few words may ſuffice on the head of REST, the irregularities therein being far leſs numerous and important than in the former. It will be ſufficient to notice them in regard to the improper inducement of young children to continue in action after they feel themſelves wearied, and in keeping them out of bed

* A proper attention to this, and many of the preceding articles has been conceived to be of ſo much importance, that the benevolent Governors of the *Britiſh* Lying-in Hoſpital, ſome years ago gave orders, that ſuitable Directions on theſe heads ſhould be drawn up, and given to every mother, on her leaving that Charity.

beyond

beyond a proper hour. Children in health never wiſh to ſit ſtill when they do not actually feel it to be neceſſary, much leſs to go to bed over early. But it is to be remembered, that young people require more ſleep, and to be longer in a recumbent poſture than adults; for though they uſually riſe very early, they get to reſt more than proportionally ſoon, being diſpoſed to fall aſleep almoſt the moment they are ſtill; and this is natural to them, and is a demonſtration of the advantage of exerciſe.

PROLIX as theſe articles may appear, it may, nevertheleſs, add a completeneſs acceptable to the younger part of the profeſſion, to comprehend under them ſeveral things relating to the different *Modes* of Motion and Reſt, and pointing out many improprieties that have a natural tendency to induce, or increaſe various correſponding deformities.

Theſe will relate to the manner of children's *ſtanding*, *walking*, *ſitting*, and *lying*, and particularly reſpect the poſition of the

the head and feet, and the form of the back, ſhoulders, and hips. It may not, therefore, be improper in this place, nor it is hoped, be thought going out of the true line of my profeſſion to advert a little to each of theſe. Indeed, to propoſe regulations of any kind merely with a view to a graceful manner of ſtanding or walking, would be highly incompatible with the intention of the work; but ſince this part of it is appropriated to the general management of children, it is hoped the reader may not deem it altogether impertinent that he is invited to pay attention to certain things, which for want of correction whilſt children are young, and frequently under the eye of medical people, may by the neglect of their ordinary, and leſs intelligent attendants, grow up to real evils. For it is very certain, that from an improper manner of reſting upon any of the extremities, whether in ſitting or otherwiſe, different parts may take an ill form; and what is worſe than an awkward appearance,

ance, (to which their parents are apt to confine their attention) children often grow up weak; whereby the poor become unfit for thoſe labours and exerciſes for which they are deſigned, and the neceſſities of their ſituation frequently demand.

And I here beg leave to remark, that the very means frequently made uſe of by people of rank to prevent ſome of theſe deformities, may on the contrary, occaſion them. Such are the uſe of ſteel-collars, various ſorts of ſtiff ſtays, and other tight bandages. For I am confident, nor am I ſingular in the opinion, that when recourſe is had to theſe things, before any parts have taken a wrong turn, they are very likely to occaſion it. Not that ſuch contrivances are afterwards improper; for when the bones have, by any means, been thrown out of their natural direction, Art can frequently rectify it, and point out where to apply, or to take off preſſure; and has been fully conſidered in the account of diſeaſes. But before this, and while the bones are growing,

compreſſion, however properly applied, is in effect oftentimes ill-directed, owing to the continual and irregular action of children, eſpecially when they feel any parts unpleaſantly confined.

I COME now to the circumſtances immediately hinted at, and firſt thoſe which regard the head or neck.

MANY infants come into the world either with the neck drawn a little to one ſide, or an awkward turn of the head appears to take place afterwards. In the latter inſtance, it may be the effect of habit, and amongſt other cauſes may be owing to children being placed in the cradle, or carried improperly, ſo that the light, and other objects that forcibly attract their notice, are too frequently on the ſame ſide. The remedy in either caſe, as far as it may become ſuch, is obvious, differing nothing from the intentions already noticed in the chapter on ſquinting; every thing ſhould be ſo contrived as may tend to draw the head to the other ſide, and eſpecially ſuch things

as

as may have a ſudden and forcible operation on the muſcles, by producing ſtrong voluntary motions. It may not, perhaps, occur to every one, how much may be effected by ſuch means. Several ſtriking inſtances of it, however, have been met with; * and we daily obſerve ſimilar effects of a certain poſition in flowers and ſhrubs, which without any help from the hand, turn about, obedient to the air and ſun operating upon their internal ſtructure.

* An Embaſſador from *Morocco* being at *Paris* went to ſee the *Charity-Hoſpital*, where paſſing the ward for the wounded, ſix of them who had not ſtirred for ſeveral months before, roſe up and came to the Embaſſador, to the great ſurpriſe of the whole hoſpital; † curioſity or ſurpriſe effecting that, which the moſt powerful medicines could not, in ſo ſhort a time.—The like circumſtance, is reported to have taken place very lately from a fire happening in the houſe where an elderly lady had long lain bed-ridden; who perceiving the fire, ſuddenly roſe up from her bed, without any aſſiſtance, and ran into the ſtreet.

† Hiſtoire de l'Ambaſſadeur de *Maroc*, Envoye au Roi de *France*, en 1682.

THE next obſervations reſpect the back and ſhoulders—Some young children, naturally well-formed, acquire after a while what is termed round-ſhoulders; the vertebræ of the neck and back, projecting too much, and forming an unſightly curve.

The morbid affection of this part has been mentioned already; I have only to notice here a change ariſing merely from ſome bad habit or cuſtom, through an improper manner of *ſitting* or *ſtanding*. In regard to the former, it may be obſerved, that the ſoft concave-bottomed chairs, in which young children uſually ſit, are on many accounts improper for their years, who ſhould always make uſe of a flat and hard ſeat, and generally without arms, as directed for the prolapſus ani; which complaint it would have a tendency to prevent. But in the hollow-bottomed chairs children find themſelves obliged to recline in one way or other, or to be making certain exertions for keeping themſelves upright, and preſerving an equilibrium of

the

the body; and it is obvious, that either a bending poſture, or the efforts neceſſary to avoid it, if often repeated, may become hurtful to weakly children.

AN improper manner of *ſtanding*, though leſs frequently a ſource of this kind of miſchief, on account of the poſition being more frequently varied than in ſitting, is, nevertheleſs, capable of giving an awkward turn to the back and ſhoulders, as well as to the feet. We are creatures of habit, both in reſpect to our bodies and minds, ſo that to whatever we may have for a little while accuſtomed ourſelves, we have an increaſing propenſity; and when the habit is once formed it is with difficulty broken. Children ſhould therefore be early accuſtomed to ſtand very upright, inſtead of being ſuffered to lean upon whatever may happen to be near them, as they are frequently diſpoſed to do.

Should one of the ſhoulder-blades *projeƈt* more than the other, the child ſhould lie as much as may be on the contrary ſide; as the ſhoulder upon which one lies

always projects beyond the plane of the back. When the ſhoulders themſelves happen to be too high, a child ſo diſpoſed ſhould never be ſuffered to ſit in an elbow-chair; nor ſhould any child ſit before a table, that is either much too high or too low for the ſeat in which he may be placed, eſpecially if it be for the purpoſe of reading, writing, or any other employment that may engage him for any length of time. But if one of the ſhoulders be *higher* than the other, the child ſhould frequently be directed to ſtand only upon the foot of that ſide, at leaſt to bear his weight chiefly upon it; by which means, the ſhoulder that is too high muſt neceſſarily fall lower, and the other be raiſed: or a ſmall weight may be put upon the ſhoulder that is too low, which will incline the child to raiſe it up. Or he may be cauſed frequently to carry a light chair, or ſuch like play-thing, in the hand of that ſide, which will have the ſame effect. The like means ſhould be uſed when one hip is higher than the other,

other, which is both a very common and peculiarly unfortunate complaint.

Another eaſy and efficacious mean of rectifying the ſhoulders, is to make the child ſupport himſelf with a very ſhort cane on the ſide where the ſhoulder is too high, which will oblige him to lower it; and at other times, to put one that is too long for him into the other hand, which will raiſe the ſhoulder on that ſide. He may likewiſe often ſit in a chair with two arms, one of them being made a little higher than the other.

Theſe and other ſimilar means may be very eaſily complied with, and ſeveral of them ſo managed as to be made a ſort of play or amuſement to the child; and if properly perſevered in, will correct many deformities that have originated merely from bad habits, as well as conſpire with other contrivances to remedy ſuch as may depend upon a ſlight mal-formation.

THE *Feet* of children, it has been ſaid, are likewiſe liable to receive an improper

turn; and this may ariſe from habit, as well as from original mal-formation, which has already been noticed. Children when converſing with thoſe with whom they are familiar, ſeldom ſtand firmly on their feet, but are apt to lean upon one ſide of them, ſo as to bear almoſt upon the ankle, inſtead of the ſoles of the feet. By degrees, this habit is not only increaſed, but the tendons themſelves are diſpoſed to contract, or thoſe on the oppoſite ſide become weakened. In the like manner, by ſtanding upon the toes, the tendon of the heel, in time, becomes ſhorter, as is manifeſt in every woman who wears very high-heeled ſhoes. To obviate the former, little more is required, than to correct the child's manner of ſtanding, by teaching him to bear firmly on the bottom of his feet: or if a foot be turned very much to either ſide, the ſole of the ſhoe may be thickened upon the ſide on which the child bears. If by treading upon the toes, the heel is become contracted, the heel-

piece

piece ſhould be taken off from that ſhoe, inſtead of its being raiſed; as hath ſometimes been very improperly done. Beſide this, ſuch children ſhould be frequently cauſed to walk up ſteep aſcents, by which they will be obliged to bear up the fore-part of the foot, whereby the tendon of the leg will be ſtretched, and the heel muſt fall lower.

Moſt of the remedies propoſed for theſe little diſorders, will have another advantage, as they neceſſarily inculcate exerciſe; in favour of which ſo much has been ſaid: the great neglect of it, eſpecially among the poor, is daily lamented by every man of obſervation and feeling, and the more ſo, as it is a Good they cannot always command.

If I had not already far exceeded the bounds I had intended, I ſhould be induced to ſay ſomething on the Manner in which Exerciſe becomes ſo beneficial to children—Let it ſuffice, however, to extract a few of the pertinent and elegant remarks

of

of DESESSARTZ* on this head, whilſt I more briefly obſerve, that Exerciſe tends to

* "LA liaiſon et la dépendance que l'auteur ſuprême de la nature a établies entre toutes les parties de ce compoſé merveilleux, ſont ſi intimes, que le Prince de la Médicine nous a répreſenté le corps animé, et jouiſſant de ſes fonctions, comme un cercle dans lequel on ne peut reconnoître ni commencement, ni fin.—En effet, les inſtrumens deſtinés à la chylification tirent toute leur force des organes de la ſanguification, ceux-ci des nerfs et du fluide qui'ls contiennent: et ce fluide (ſi nous en croyons le ſyſtême le plus univerſellement adopté, et auquel il manque peu de choſe pour être démontré: ce fluide) tire ſon origine du ſang, et le ſang des alimens que nous prenons tous les jours.—De la conſtance et de la régularité de fonctions auſſi différentes et auſſi multipliées dépendent notre ſanté et notre vie. Il ne ſuffit pas de prendre des nourritures, il faut qu'elles ſoient bien digérées, changées en ſang, et ce ſang doit être aſſez travaillé pour fournir non ſeulement la lymphe nourriciere de tout le corps, mais encore un fluide très-ſubtil qu'on appelle fluide animal. Chaque liqueur doit être ſeparée dans ſes glandes, et celles que la nature rejette comme inutiles et dangereuſes, doivent être pouſſées au dehors.

Or, rien n'eſt plus propre à faciliter et a perfectionner toutes ces opérations, que l'Exerciſe. Si nous jettons les yeux ſur notre corps, nous y appercevrons une multitude

to puſh forward the blood through the ſmall veſſels, and to unfold them in the manner nature has deſigned them to be extended, in order to promote the growth of the infant, whilſt it preſerves the blood in a proper ſtate of fluidity, and promotes both the Secretions and Excretions; which are the next things it was propoſed to conſider.

multitude de vaiſſeaux qui ſont entrelaſſés les uns dans les autres, ſerpentans entre les fibres muſculaires, à la preſſion ſucceſſive deſquelles ils doivent une grande partie de leur movement et de leur action ſur les fluides. A meſure que les muſcles entrent en jeu, ils produiſent des ſecouſſes reiterées ſur les vaiſſeaux ſanguins, qui ſe communiquent dans tout le ſyſtême artériel et veineux. Ces ſecouſſes non ſeulement procurent aux fibres la force, et la ſoupleſſe, qui caracteriſſent leur bonne conſtitution, mais elles broyent, atténuent et ſubtiliſent les liquides contenus dans les vaiſſeaux, achèvent la tranſmutation du chyle en ſang, en lymphe, et en fluide animal; la circulation eſt plus libre, les ſécrétions ſe font mieux, et plus uniformément et la digeſtion en devient plus parfaite."—*Traité de l'èducation corporelle des Enfans en bas Age.*

RETENTION

RETENTION *and* EXCRETION.

EVERY medical reader will be ſenſible, how greatly health depends upon a due proportion between the daily ſupplies, and the various diſcharges of the body: the latter will vary according to the diet, age, and particular mode of life of each individual. The excretions of infants, however, inſenſible perſpiration excepted, are chiefly from the bowels and bladder; but the latter is not very liable to diſorders. After what has been already advanced under the head of *Diſeaſes*, it will be ſufficient, therefore, to ſay, that the retention of urine during early infancy is chiefly from the birth, and is uſually removed by applying a bladder of hot water to the belly, and gentle rubbing with a little warm brandy, with oil of juniper and oil of almonds, or an onion; and throwing up a clyſter: or ſhould theſe fail,

fail, the infant may be put up to the breaſt in a pan of warm water, and take a ſpoonful of marſh-mallow, or parſley, or wild-carrot-tea, ſweetened with honey, with the addition of two or three drops of the ſpirit. æther nitroſi. This, if there be no mal-formation of parts, will generally produce the deſired effect in the courſe of a few hours; though caſes have occured in which infants have voided no urine for the ſpace of four days, and have ſuffered very little inconvenience: I have even known one inſtance of the ſuppreſſion continuing for five days; and it is remarkable, that two former infants in this family voided no urine for three days. Should the ſuppreſſion, however, continue during two complete days, the following cataplaſm may be applied warm to the region of the pubis.

TAKE of parſley and mallow-roots, leaves of creſſes, and juniper-berries, of each a handful, and of the roots of garlic one ounce; boil them ſlowly in water, or in wine, to the proper conſiſtence for a poultice.

tice. On the other hand, the ſudden application of cold to the regio pubis has ſometimes produced an immediate good effect. Where all theſe means have failed, and the infant been in much pain, I have directed a clyſter with a few drops of laudanum, which has preſently removed both the pain and ſuppreſſion.

As in adults a ſuppreſſion of a very diſtreſſing kind ſometimes occurs merely from a ſpaſmodic ſtricture of the urethra; and not only reſiſts for a length of time the ordinary means of cure, but is found to recur again after a temporary removal; it may not be amiſs juſt to notice it here, as the complaint may, poſſibly, be met with in robuſt youths, although I have never yet ſeen it. The remedy for it is alſo very ſimple, and I believe newly diſcovered, and firſt announced by Mr. CLINE,* conſiſting only in the tinctura ferri muriati, which he adviſes in the doſe of gtt. x, to adult perſons, every ten

* *Medical Records and Reſearches,*

minutes,

minutes, till ſome relaxation ſhall take place; which generally does in the courſe of an hour.

SOME of the old writers have ſpoken alſo of incontinence of urine, ariſing from weakneſs of the ſphincter of the bladder; but I have never met with it in early infancy. They preſcribe agrimony and myrrhe, and direct aſtringent fomentations of red wine to the belly, perinæum, and loins.

THE preſent obſervations are therefore chiefly confined to the Bowels, which would call for a ſcrupulous attention in this place, if ſo many things relative to them had not been diſcuſſed in a former part of this work. It were needleſs, therefore, to ſay more, than that (generally ſpeaking) infants are rarely healthy long together, who have not two or three ſtools every day; or ſhould they be more, for the firſt three months, if the child be brought up at the breaſt, and the nurſe have a ſufficiency of milk, it will generally thrive the better. The

ſtools

ſtools likewiſe ought to be looſe, of a yellow colour, free from lumps, or curdy matter, neither of a very acid, nor fetid ſmell; and ſhould come away without griping. When children are about a year old, or perhaps earlier, pains ſhould be taken to procure one ſtool at leaſt every day, as well periodically, as conſtantly; and for this, the morning is moſt adapted, and after breakfaſt, by which the ſtomach and bowels will be ſtimulated. To this end they ſhould be ſet on the chair, and not ſuffered to play until they have had an opening, for which they ſhould ſtrain, till at length it becomes cuſtomary, which may be eaſily effected; and by which we ſhall gain a point, with reſpect to the health of children. On the other hand, if an infant is brought up by hand, the danger generally lies in the other extreme, ſuch children being diſpoſed to be purged, and to have griping and ſour ſtools, from the aceſcent, and often indigeſtible nature of their food, eſpecially if fed by the ſpoon; and therefore require an early attention

tention when their bowels are diſpoſed to be open, and their food to be changed, in the manner directed under the article of Purging.

The PASSIONS *of the* MIND.

THIS is the laſt Article mentioned as included in the *Non-naturals*, and on which I ſhall be very brief, it being the happineſs of Infants to be very little affected by them. This article can, therefore, relate to them merely in regard to their mode of expreſſing ſuch paſſions, and principally reſpects Laughter and Crying. The former, if long kept up, or very violent, may not only induce the hiccough, but it is ſaid, may even throw an infant into fits. The latter is, indeed, much oftener ſuſpected of being miſchievous; and chiefly by occaſioning fits, or a rupture: the exceſs of both theſe affections ſhould, therefore, be guarded againſt. Moderate, and not too frequent Crying, how-

ever, ought not to be alarming; and, indeed, a variety of conſiderations induce me to believe, that this expreſſion of the paſſions in Infants is not only much more harmleſs in itſelf than is generally imagined, but is alſo, in ſome reſpects, ſalutary. The firſt Cries it makes we know to be ſo, and that children recover from the paroxyſms of ſome complaints (as was mentioned in regard to the Croup) by an effort of this kind. It is evident likewiſe, how very much health depends on a free circulation of the blood through the lungs, and on their free expanſion from the dilatation of the bronchial veſſels. But as new-born infants are incapable of giving themſelves any exerciſe, and, indeed, of receiving that kind which tends to promote ſuch an effect, I have conceived Crying to be an effort which Nature may have wiſely ſubſtituted in its ſtead.* Whatever is truly natural I al-

* Fletus moderatus pueris non obeſt—pectus dilatat et calefacit. PRIMEROS. See alſo *Ariſtot. Politic. Lib.* vii. C. 17, where the idea is ſupported more at large.

ways

ways conceive to be right, though every thing, is capable of being abuſed, and the moſt beneficial dictates of nature may be exceeded. I am ſatisfied, however, that the pacifying of children by improper means, and eſpecially cramming them with food when they are not hungry, (againſt which ſo much has been ſaid) occaſions far greater evils in thouſands of inſtances, than ever were produced by the irritation from Crying. The cries of infants, however, are very commonly plaintive; and as they ſeem to argue diſtreſs, cannot but create it in every perſon of ſenſibility around them. The Nurſe, therefore, who can with calmneſs, hear an Infant cry, without attempting to pacify it, by every proper mean, is a Monſter in human ſhape, unfit to be truſted with the care of any animal being, much leſs with a tender, helpleſs creature, whoſe only language, by which it can expreſs its wants or its ſufferings is its TEARS.

I cannot take my leave of the reader without offering one apology more for

having dwelt ſo long on this, and ſome other heads leſs important than the reſt; my motive has been the deſire of inſtructing, though in ſome inſtances at the riſk of tiring, or otherwiſe diſpleaſing; but practitioners who feel as parents, will endeavour, by every means, to leſſen a mother's fears as far as they may appear to be needleſs, wherever no other Remedy can be offered.

I SHALL conclude by obſerving, that, though the Paſſions of the Mind refer ſo little to Infants, they relate very materially to the Wet-nurſe; who beſides endeavouring to keep her ſpirits as calm as poſſible, ought to be exceedingly careful not to put a child to her breaſt, when under the influence of any violent paſſion, of whatever kind it may be, the bad effects of which have already been inſtanced under the head of diſeaſes. And I ſhall think myſelf well recompenſed for the trouble I have had, if this, or other hints, may prove the means of leſſening the dangers of the infant-ſtate, and the

conſequent ſad fatality that attends it; as well as of abating the anxiety of the fond Mother, who after having brought her tender Charge into the world with Sorrow, is pierced with double Pangs at its leaving it.—An Event which, as Experience warrants me to ſay, may by Art and good Management, be often prevented, the author ardently hopes, that both Parents and Practitioners may have fewer occaſions to lament.

AN ALPHABETICAL LIST OF Medicines recommended in this Work,

TO WHICH

The COLLEGE of PHYSICIANS have given *new* Names.

NEW NAMES.	*Names formerly in Use.*
A.	
ACIDUM muriaticum.	Spiritus Salis marini.
Aqua Ammoniæ.	Spiritus Salis ammoniaci.
Aqua Ammoniæ acetatæ.	Spiritus Mindereri.
Antimonium tartarisatum.	Tartarum emeticum.
Aqua Cupri ammoniati.	Aqua Sapphirina.
Aqua Kali puri.	Lixivium saponarium.
Aqua Kali præparati	Lixivium Tartari.
Aqua lithargyri acetati.	Extractum Saturni.
Aqua lithargyri acetati composita.	Aqua vegetabilis mineralis.
Argentum nitratum.	Caustícum lunare.
C.	
Calx Antimonii.	Antimonium calcinatum.
Catechu.	Terra Japonica.
Confectio aromatica.	Confectio cardiaca.

Empla-

E.

Emplaſtrum Ladani	Emplaſtrum ſtomachicum
Emplaſtrum lithargyri.	Emplaſtrum commune.

H.

Hydrargyrus muriatus.	Merc. corros. ſubl. albus.

L.

Liquor volatilis cornu Cervi.	Spiritus volatilis cornu cervi.

N

Natron præparatum.	Sal Sodæ.
Natron tartariſatum.	Sal Rupellenſis.

P

Pulvis è Scammonio cum Calomelane.	Pulvis Baſilicus.

S

Spiritus Ammoniæ compoſitus.	Spiritus volatilis aromaticus.
Spiritus camphoratus.	Spiritus vinoſus camphoratus.
Sp. æthæris vitriolici.	Spiritus Vitrioli dulcis,
Spiritus atheris vitriolici compoſitus.	Liquor anodynus mineralis.
Spiritus ætheris Nitroſi.	Spiritus Nitri dulcis.

Tinctura

T.

Tinctura Aloës composita.
Tinctura Catechu.
Tinctura Gentianæ composita.
Tinctura Opii.
Elixir Aloës.
Tinctura Terræ Japonicæ.
Tinctura amara.
Tinctura Thebaica.

U.

Unguentum Calcis Hydrargyri albæ.
Unguentum Ceruſſæ acetatæ.
Unguentum Hydrargyri nitrati.
Unguentum è Mercurio præcipitato.
Unguentum ſaturninum.
Unguentum citrinum.